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CONSERVATION OF VISION AND PREVENTION OF BLINDNESS *

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PHILADELPHIA

In a recent novel occur these words: "The light was going fast. . . . With the splendid [I would amend, the foolish] disregard of youth for its most precious gift, Elsa strained her eyes to thread her needle once more." A great schoolmaster, rich in the wisdom of ripe experience, has said "More eyes are harmed in the home than in the school." Three children sat on the sidelines of a playground, blinking pitifully and peering uncertainly at their comrades romping over the field. Asked why they did not join the merry throng, they replied, "We can't see well enough to play that game." A group of men and women from the better walks of life watched a company of children at play, inmates of a great institution, all blind, and one fourth of them the subjects of blindness from a cause by which they need not have been enslaved. Voicing a popular belief, one spoke thus: "Isn't it pathetic, and yet how cheerful they are; how sweet their dispositions." Shall such sweetness, such cheerfulness, I ask you, be purchased with the coin of blindness?

Two years ago Henry Copley Greene, writing concerning the subject which interests us, issued a "challenge to the professions"; today I would in like manner (I wish I were the master of Mr. Greene's incisive language) issue, not a challenge, but an appeal to society, and ask five questions: Shall Elsa be allowed to trifle with her most precious possession? Shall our homes be permitted to disregard the laws of visual hygiene? Shall children, and those children of the larger growth — men and women — remain on the sidelines because they can't see well enough to play that game, the great game of stirring life with its joy of untrammeled effort? Shall they not have a game which they *can* play? Shall we of these better walks of life pursue our ways in smug contentment, and permit the preventable causes of blindness to continue their black business and ever add to the roll of their victims?

Of the blind population of our country, in general terms these are the component parts: Those who are really blind, for whom the light has gone out; those who still perceive the light, an even more pathetic group; those who see something (with the better eye) as we paradoxically phrase it, the practically or partially blind. But the matter dose not end here. There remains the great group, excluded from the blind population by strict definition, but excluded, too, in large measure, from the ordinary avocations of life whereby bread is won, the "partly sighted." They are not at home in the world of those who have sight, or in that of those who are blind. They dwell in the borderland. They sit on the sidelines.

Let me turn for a moment to the blind. For our present purpose it is not necessary to argue about accuracy of statistical tables; it is safe to say that fully 100,000 men, women and children in this country are, within the strict definition, blind; one fourth of this number need not have lost their sight — the causes of their misfortune are in large measure preventable. These 25,000 persons, by their blindness, deprive the country yearly of about 8 millions of dollars' worth of productive labor. Now the financial stability of our country is not disturbed by this loss of income; we can afford it; we cannot afford the stigma which the loss entails. Because we want this blot erased, we are here to help in the work of health education and of eyesight protection; we are here to call on society for aid in devising measures and for means to carry them out in order that effective results shall merge into perfect victory. We are here, too, I take it, to cure those who are dullsighted in this regard, so that with vision cleared they shall join in the struggle for ocular conservation and make it possible to give sweetness of disposition and ever present cheerfulness, not to the blind (the good God attends to that) but to those who shall be saved from blindness.

The problems are manifold, and their solution of necessity varies in difficulty. Much result-begetting labor has been expended, and we are deeply in the debt of many physicians in their individual capacity and in their state and national organizations, and in the debt, too, of many lay men and women who also in individual capacity, organization and in special field work have given a fine example of generous activity and effective service, which it is a joy to remember and a privilege to record.

The efforts to prevent blindness have been directed through many channels — legal, professional, institutional, social and industrial. They have often been described, and with most of them all of us are familiar. Time does not permit me now to do more than touch on one or two points. Twenty-five per cent. of the inmates of schools and asylums for the blind have lost their sight from that ocular disease usually named ophthalmia neonatorum, which is a conspicuous cause of preventable blindness. About 65 per cent. of the cases of ophthalmia neonatorum are due to a microorganism of high pathogenicity, and this virulent type of the disease, it is estimated, is the cause of approxi-

* Delivered before the National Committee for the Prevention of Blindness, Nov. 4, 1915.

mately 8 per cent. of the blindness in most of the regions of our country. If suitable measures are brought into action to check its ravages, the ocular mortality can be greatly reduced.

In general terms, the measures devised and in operation for the elimination of this preventable cause of blindness are education, compulsory notification, the punishment by law of offenders against properly constructed legal regulations, and compulsory prophylaxis.

EDUCATION

In any program for the prevention of blindness, education and its collaborator "publicity" properly receive large attention. Education intimately concerns the midwife and other persons who have charge of a new-born child, and it should be a prerequisite for the registration of midwives that they should give satisfactory evidence of a proficiency in the knowledge of the dangers and prevention of ophthalmia neonatorum. It is directly related to the duties of teachers of ophthalmology, obstetrics, bacteriology, sanitary science and hygiene, who should so instruct their students in this important subject that they may acquire not only the necessary information, but also a decent respect for their future responsibilities in this regard. But even more important are the education which should be received by the mother who expects to bring a child into the world, by those who constitute her family, by her neightbors, and in short, by the society to which she belongs, and the methods by which this education shall be imparted. To one method I shall refer.

At stated intervals, in communities in which numerous foreigners and negroes of the poorer class are gathered together, from whom many of the most virulent types of this disease are recruited,[1] meetings are organized, and the dangers of the disease are detailed and the methods of overcoming them are described, not by a physician, a social worker, or a visiting nurse, whose advice even when tactfully offered is often resented or regarded with suspicion, but by one of their own number whose words receive respectful attention, and who has acquired influence in the community. His lecture or talk has been prepared for him in the simplest language, and is read or recited by him at the meeting described, always in the language spoken by the majority of his audience, and is illustrated with suitable lantern slides. In these circumstances mothers soon realize what they have a right to demand in the way of attention when their children are born, what they shall insist shall be done, and insistently done, if the eyes of the new-born baby show signs of inflammation, and what penalties may be imposed and must be paid if those in attendance disregard the danger with which the mother is now familiar.

I do not deprecate the excellent results which have followed campaigns of publicity, illustrated lectures, exhibits, newspaper articles, and the distribution of pamphlets of instruction, but I have potent reasons for believing that knowledge thus filtered into the homes of those who are likely to be affected receives an amount of attention far exceeding that which is given to the more usual courses of instruction to which I have referred, and many others who have followed this plan can give like testimony. Had I time I would read one of these lectures, prepared for just such meetings as I have described. For this method of conveying information, we are indebted to Miss Henrietta B. Ely.

COMPULSORY PROPHYLAXIS AND THE FREE DISTRIBUTION OF A PROPHYLACTIC

It is generally, and I think correctly, assumed that since the introduction more than thirty years ago of the Credé prophylactic method there has been a decrease in the number of cases of ophthalmia, at least in large institutions in which trained nurses and trained service are available. Most of us agree that in hospitals entirely devoted to obstetric service, or in hospitals in which large wards exist for this purpose, a modification of the original Credé method in the sense that the strength of the prophylactic is reduced from that originally recommended is of great value. While I do not doubt, as Mr. Van Cleve and others have pointed out, that the distribution of vials of a 1 per cent. solution of silver nitrate to registered physicians, nurses and midwives has proved to be an advertising device both effective and informing, I do doubt whether this is a remedy which it is safe to place in the hands of those who are improperly instructed, or who altogether lack instruction, but who none the less perform the duties of a midwife, and I further doubt whether a leaflet containing directions as to how these vials shall be used is of much service to any of these imperfectly educated persons, and I regret to say that imperfection in education in this respect is not alone a fault peculiar to midwives. I have seen so many severe silver catarrhs in my life, and have certainly seen at least half a dozen eyes badly injured by the reckless or improper use of silver nitrate, that I am inclined to agree with some of the contentions that are prevalent in England, particularly those of Mr. N. Bishop Harman, although I do not dispute the efficiency of the Credé method, and believe it to be essential in institution work and in the hands of those who are competent to use it.

Three years ago I endeavored to ascertain, with the aid of the secretary of the committee on the prevention of blindness of the New York association, whether any advantage or disadvantage had been derived from the compulsory distribution of a prophylactic agent against ophthalmia neonatorum. At that time the files of this office had no statistics to offer as to the advantage or disadvantage in these circumstances, and one was obliged to conclude, as the committee of the American Medical Association had pointed out, that the matter could be settled only by a consultation between committees of experienced physicians which exist in each state and the departments of state public health.

I am fully aware that the distribution of a prophylactic among trained midwives and used by skilful physicians is capable of reducing the percentage of ophthalmia neonatorum, and it may even be, as Wootten has stated, that where the rigid supervision of midwives is in force, and where the training of midwives by accomplished obstetricians takes place, a greater number of cases of ophthalmia occur in the practice of physicians than in the practice of midwives.

But this does not answer the objection which pertains to certain dangers which belong to the *unrestricted* distribution of the silver prophylactic, and if

1. Children of English-speaking parentage are by no means immune; for example, among 116 cases of ophthalmia neonatorum treated in the Gardner ward of the Massachusetts Charitable Eye and Ear Infirmary, according to some published statistics, it was found that seventy-three had come from English-speaking parentage and sixty-three from homes that were considered to be good. The scheme of instruction outlined above does not of course apply in circumstances like these.

it is true that we are yet without the necessary information which should be on file and which should decide whether the advantages derived from the compulsory distribution of a prophylactic agent against ophthalmia neonatorum outweigh certain disadvantages, we ought to have it as soon as possible. A consultation between committees of physicians and departments of health before referred to may be useful, but only too often represents a rather slow-working piece of machinery, and it would therefore seem to be imperative that one of the first duties of a national committee for the prevention of blindness should be to make, with the cooperation of the various state associations which are concerned in this vital business, an intensive study of this whole subject, a study which should be controlled from its central office and undertaken by field agents and others interested in this important matter. This becomes especially important because of the recent statement of one of the greatest of continental authorities that sophol should be used in place of "the formerly employed Credé silver prophylactic."

In the absence of satisfying knowledge on this subject, and so far as my present personal experience is concerned, I believe that compulsory notification represents the most effective method at our command, a notification which should go at once to a legally qualified practitioner, or to a responsible board whose officers can quickly command the services of some one skilled in the treatment or the management of ocular disease. This usually secures promptness in treatment, and evidently, as Lucien Howe has said, should there be neglect in reporting, and should the strong hand of the law reach out to a person, no matter who he or she may be, who trifles with the vision of an infant, the effect is extremely salutary.

As is frequently the case, a district physician or registered midwife, recognizing ophthalmia neonatorum in its earliest stages, sends the child to a competent eye dispensary, and the daily treatment is excellent, but it is not enough; it is the constant supervision of these eyes by trained persons which saves sight. Since all properly managed hospitals at the present time have as part of their equipment a social service, the difficulties of home treatment have been lessened, and the follow-up system has been productive of admirable results, as witness the value, for example, of this type of work in Boston and other cities.

And yet even the social worker and the follow-up system are not always able to control home treatment, or at least not able to make it as effective as the virulence of the inflammation of the baby's eyes may demand. In some cities there are hospitals with wards specially arranged, like the admirable Gardner ward of the Massachusetts General Hospital, for the treatment of these diseases, but many hospitals have no such wards. Not only have they no such wards, but many of them do not admit these cases.

In a collective investigation made by a member of my staff, Dr. T. B. Holloway, of forty-two hospitals in Pennsylvania, only two returned an unqualified statement that ophthalmia neonatorum patients would be accepted. Very properly, he concludes that hospitals receiving state aid should be compelled by law to provide suitable accommodations for the victims of ophthalmia neonatorum. Moreover, society, in the general sense of the term, which supports certain other hospitals not accepting state aid, should demand that they shall make similar provisions. The National Committee for the Prevention of Blindness should force this issue with all the influence it can command, not only because it represents a real work of humanity, but also, if you choose, from a commercial standpoint, because it would mean a reduction of the blind from this cause and therefore a lessening of the economic loss to the commonwealth in which these hospitals exist.

In one state of this Union it has been computed that 100 of the young blind have lost their sight from ophthalmia neonatorum, and that these 100 young persons will eventually cost the state $300,000 for education alone, while the economic loss to the commonwealth because of their lifelong dependence will be many times that sum. Three years ago in the state of Pennsylvania, $123,000 was appropriated by the commonwealth to four institutions or organizations for the blind, and approximately $32,000 of this money was devoted to the welfare of those who were blind from ophthalmia neonatorum. Moreover, as Dr. Holloway in his admirable report on the subject points out, it costs the state of Pennsylvania approximately ten times as much to educate one blind child as it does to educate one seeing child. Perhaps if these figures and similar estimates which could be readily gathered in the various states, were presented to the legislators, they would see fit to take into serious consideration such a law as I have ventured to suggest, especially if it were made plain that if a child with ophthalmia neonatorum in the earliest stages of its development can be transferred to a ward specially devoted to the treatment of this disease, except in rare circumstances, the inflammation can be brought into control and sight saved.

TRACHOMA AND GLAUCOMA

Ophthalmia neonatorum and its ravages are so conspicuous that they have received, I will not say undue attention, for too much attention cannot be paid to this subject, but an attention which has overshadowed the importance of many of the other preventable causes of blindness. There is some danger that people outside of the medical profession and of the organizations devoted to visual conservation shall come to regard the prevention of blindness and the prevention of ophthalmia neonatorum as synonymous terms, and unwittingly fail to realize the scope and possibilities of the national committee for the prevention of blindness. The same, in a certain sense, as Dr. Alger has pointed out, is true of trachoma, and important as the subject is from the standpoint of control of immigration, as well as from the standpoint of the elaboration of facilities for the management of this disease, now happily increasing on all sides, I shall not make further reference to it. Neither shall I attempt to discuss toxic blindness and its prevention, or the problems which surround certain infections, dyscrasias and constitutional diseases in their relation to the degradation of vision, or industrial blindness.

I wonder if it is generally realized how large a percentage of blind persons owe their loss of sight to the disease glaucoma. This disease shall serve as a sample of some of the work which it would seem to me pertains to such an association as this is and proposes to be. If a study is made of the cases of blindness in hospitals, it will be found that the percentage of blindness from glaucoma often exceeds that from any other cause; such an investigation was undertaken by the Massachusetts Commission for the Blind in 1910. To

prevent this disease, or rather, to check it after it has been discovered, Mr. Greene suggests eugenic education, inasmuch as it is sometimes hereditary, the wise distribution of public clinics, and the careful record of the social worker's desk of patients who have come for the relief of glaucoma, so that they shall come under the influence of the follow-up system. All these suggestions are good, but a great difficulty is that patients with the nonpainful, so-called chronic types of glaucoma often report too late. They do not realize what has been slowly taking place, and come only when vision is so far degraded that they are helpless. We educate, or try to educate, households in the dangers and symptoms of ophthalmias. Why not educate them in the early symptoms of glaucoma? I called to see a woman blind, or practically blind, from this disease not long ago, and while evolving the history, the long pathetic history, I was struck with an expression of one of the children in the family who remarked, "We used to wonder when mother took us to the movies why she always saw colored rings around the lights." If only "mother" had known what those colored rings meant there would be one less blind woman in the city from which I come.

Now the social worker who makes, to use Mr. Greene's expression, a calendar of glaucoma patients in any hospital, and properly follows them up, will do much, for it is through this channel that the education most readily passes to the races among which this disease is most prevalent, and who are the best customers of the eye clinics. Furthermore, an important function of social service is concerned with the recognition of symptoms in those who sadly need attention, but who have never presented themselves for examination, not only in the house which is visited, but also in the neighbor's house, and quickly the knowledge of the symptoms of any disease which demands prompt treatment filters through a crowded street. Such a disease is glaucoma, with its long prodromal period, just the period during which the disease can be stopped before it has produced changes which are practically irremediable. I take this affection as an example. To many other ocular conditions the same plan of prevention applies. Therefore it would seem that a national committee for the prevention of blindness should control a social service as part of its equipment, whose workers should specialize in ocular diseases, and who should in this regard assist in the extension of this work of the hospital physician into the life and home of the patient, and who would be attached to eye clinics and dispensaries which cannot afford the important help which comes from trained service of this character. The foundation of such a social service, controlled and supported by the National Committee for the Prevention of Blindness, would be welcomed by the social service organizations of this and other cities; it would possess both graduate and postgraduate possibilities, and would represent another arm of the great service which is dedicated to the work of saving sight. Time does not permit me to elaborate the plan and its effectiveness. I am sure society would realize the advantages which would spring from it, and I trust would support it.

WORK OF A NATIONAL COMMITTEE

The work of a national committee for the prevention of blindness should not be concerned alone with the prevention of blindness, in the strict sense of that term. It ought to be concerned with, and surely is much interested in, the elimination of the evils which spoil eye efficiency. I am thinking about Elsa and the fading light, and I am thinking, too, of the kind of light that ought to exist in homes, in schools, in factories and in stores. To be sure, a great deal has been done along these lines, and is part of the committee's work. Think how much has been accomplished since the almost universal examination of schoolchildren's eyes has been been made practically obligatory, and the problems of proper lighting have been carefully studied. Think how much good has been done by the Council on Health and Public Instruction of the American Medical Association in its publication of the Conservation of Vision series, under the stimulating influence of the capable chairman of the Committee on the Conservation of Vision, Dr. Allport. I venture to suggest that a national committee such as this is should have a subcommittee concerned entirely with the important question of illumination.

Doubtless every ophthalmologist can testify that scarcely a month goes by during which he is not consulted by some school or college or public institution as to the best type of illumination. Men in charge of these institutions want to know authoritatively about what Mr. Ferree calls the efficiency of the eye under different systems of illumination. We all are aware that the rays emitted by artificial lights, when studied with a spectrum, show a remarkable variety, and the potent remarks of Mr. Parsons on this subject may be emphasized, to wit, that too often the aim of inventors has been to attain a maximum efficiency, that is, a maximum illumination at a minimum cost, and comparatively scant attention has been paid to physiologic efficiency, and too little attention to the quality, that is, the wave lengths of the rays emitted by artificial sources of illumination. Would it not be a good thing if there was a department of the National Committee for the Prevention of Blindness to which application could be made for the latest information in regard to illumination? You may say that there are always illuminating engineers at the disposal of those who are interested in building operations, and of course such a department as I speak of would have to be in consultation with illuminating engineers and would need them on its staff. You know that doctors constantly appeal to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for information on any given topic, medical or surgical, and know how admirable the replies are. Would it not be perfectly possible to have an information department on illumination and its relation to visual efficiency and the conservation of the eye, a department to which the inquirer could turn for the latest practical scientific information on this subject? I do not question that it would be supported handsomely if it were known that it had been established, and you would not have far to go for the chairman of that information bureau. You have him right here heading the list of your board of directors. The work of such a bureau would be interesting and effective.

According to Mr. Van Cleve, the most important part of this national committee's work at the present time is carrying on educational propaganda, furnishing material for workers in the field and inspiring such workers to service, and he believes that in these particulars its obligations are being met. He is fully alive, however, to the importance of creating through this national committee an agency for devising means to protect, care for and conserve vision. Indeed, it would seem to me, and I have no doubt seems to all

of those who are concerned with the management of this organization, that conservation of vision in the widest acceptation of the term should be a function of paramount importance in the administration of its affairs. It is impossible in the time at my disposal to do more than make reference to the problem, for example, which surrounds the education of those who are highly myopic, the necessity of classifying them according to the degree of their visual defect, and of arranging their work accordingly. This has been the subject of much study, on the part, for example, of Mr. N. Bishop Harman in London, where, as you know, there are schools, or if not schools, departments in schools, where these high myopes, properly graded, are instructed with full consideration of their visual handicap. The same is true in the city of Berlin.

SCHOOLS FOR THE BLIND AND PARTLY SIGHTED

But it must be evident that there are many children who, in general terms, are classified as "partially blind" and "partially sighted," and they constitute an essentially different group from the myopes to whom I have made reference. As Mr. Burritt puts it, from the point of view of the educator of seeing children, they are "partially blind"; from that of the educator of blind children they are "partly sighted." They represent the class of which I spoke earlier in this paper, who, in general terms, are not blind enough to be in a school for the blind, but who are too blind to keep pace with those who are in schools for the sighted. They are visually handicapped; they sit on the sidelines and cannot play the game.

It is not my province, nor is the time an opportune one, to discuss the coeducation of blind and sighted pupils, or whether Mr. Harman's suggestion that all partially sighted children shall be excluded from schools for the blind shall be followed, or whether arrangements should be made in these schools for the blind to take care of those who have some sight. But it is interesting to know that there exist in some form in connection with the public schools of twelve states in the United States classes for the visually handicapped, and in most of these public schools there is a provision for the coeducation of the blind and sighted. But more important, it seems to me, are those classes which have been instituted in Boston, in Cleveland, in Toledo and in Cincinnati for the partly sighted children, even if the educator of seeing children looks on them as partially blind. Certainly provision should be made, as Mr. Burritt and Dr. Halloway point out, for the instruction of these children in connection with the schools of the children who have normal sight, because these visually handicapped persons must make their way through life, not as blind, but as sighted people, and their associations should, therefore, be with those who see, and not with those who are blind.

It is a matter of great satisfaction to read the report of Mr. Irwin, who has charge of the special classes in the Cleveland public schools, sent within the last few days to our institution at Overbrook, that there are now four centers in the Cleveland public schools for totally blind children, and four for those who are partially blind, that is, partly sighted. The importance of having a number of centers must be manifest to everybody, as it solves at once the difficulties of transportation. Much is being done for these borderland dwellers, but much more can be accomplished, and therefore a national committee for the prevention of blindness and the conservation of vision should do all in its power to improve facilities of education in this regard, and should concern itself not only with the conservation of vision, but also with the utilization of such vision as these handicaped children possess. In each community, through society, proper representations should be made to the various boards of education, so that they shall take up this matter, even as it has been most successfully taken up by some of the schools to which reference has been made.

It must be evident how great a work a committee such as this is and proposes to be can accomplish in this respect. As has often been pointed out, the principles underlying the management of partly sighted individuals depends in largest measure on a reasonably exact classification of the material which would come under the observation of a national committee which concerned itself with this problem. We know that children with full sight in elementary schools ought not to be lumped together in their courses of instruction, and it has been well said by Harman that "the teaching of all children should be a retail and individual proceeding, not the wholesale, stock-pattern sort of thing that takes place in our elementary schools," and yet it is difficult to get away from this faulty technic because of the large number of children who apply for education. With the partially sighted the problem is not so difficult, the material being less great, and the classification could be more readily accomplished. Just here I am tempted to exploit one of my pet theories, namely, that in schools for the blind and schools where the partially sighted are educated, much help could be gained by a sensible application of the principles of modern psychologic research. I am sure this is true in schools for the blind, and I know that Mr. Burritt of the Overbrook school agrees with me. I have not time to tell you how I think it would work out, but I cannot help expressing the hope, if not the belief, that an investigation of this character among the partially sighted would help in the classification in accordance with the need of the case of each child, and I would like to see a trained psychologist on the staff of the national committee.

THE ETIOLOGY OF SYPHILITIC AORTITIS *

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There is an inflammatory lesion of the aorta — the chronic productive mesaortitis of Heller,[1] Döhle[2] and the Kiel school of pathologists as a whole — in which the anatomic features are so frequently associated with syphilis as to indicate a specific origin. In certain quarters, however, there still is a tendency to question the syphilitic nature of the process. The lesion, which often is associated with a definite clinical history of syphilis, is practically always attended by anatomic indications of syphilis beyond the vascular system, such

* From the Pathological Laboratories of the New York Hospital and of Bellevue and Allied Hospitals.
1. Heller: Verhandl. d. deutsch. path. Gesellsch., 1899, ii, 346.
2. Döhle: Deutsch. Arch. f. klin. Med., 1895, lv, 190.

as atrophic pigmented cutaneous scars, indurative atrophy of the base of the tongue, syphilitic changes in the osseous system, gummas in various localities, and other signs of like significance. Inability to demonstrate these changes is to be ascribed, in the majority of instances, not to their absence, but to failure to find them or to interpret them properly — an opinion which we venture to assert on the basis of a somewhat extended postmortem investigation of the subject, and which is in accord with the experience of others who have sought persistently for anatomic confirmation of the syphilitic nature of mesaortitis.

Direct evidence bearing on the specific nature of the lesion in question is afforded by the fact that organisms morphologically indistinguishable from *Spirochaeta pallida* have been demonstrated in the aortic wall in Levaditi preparations (Benda,[3] Reuter,[4] Schmorl,[5] Wright and Richardson,[6] and Longcope and Cook[7]). Others, however, have been less successful. Thus, one of us (Symmers) in a prolonged search for spirochetes in the granulomatous and sclerotic lesions of syphilis in various viscera, was unable to convince himself of the presence of spiral organisms in a single one of thirty cases of syphilitic aortitis. Crowell,[8] working in the Philippine Islands, Aschoff,[9] in Germany, and Leslie Brown,[10] in the laboratories at Bellevue Hospital, have likewise failed. Nevertheless the subject is worthy of further pursuit, and it is this line of investigation which, we believe, will eventually lead to the dissipation of all doubt concerning the specific nature of the lesion.

Another and highly suggestive indication of the syphilitic nature of the process is afforded by the circumstance that, of seventy cases of mesaortitis, 78.5 per cent. yielded a positive Wassermann reaction.[11]

As far as the anatomic changes are concerned, they are most frequently observed in some portion of the arch of the aorta, and tend to disappear as the vessel descends in its course. Occasionally the thoracic or abdominal aorta is exclusively involved. The naked eye appearances are characteristic, and are marked by sharply defined, pale, hyaline elevations scattered over the inner surface of the vessel. These elevations, which seldom exceed a depth of a few millimeters, vary in diameter up to several centimeters, and are elastic in consistence, smooth to the touch and free from calcium. In some cases the hyaline plaques are so distributed as to produce stenosis of the coronary arteries or other of the smaller branches of the aorta; and partial or even complete occlusion of such enormous branches as the innominate and left carotid has been described.[12] Aneurysmal dilatation of the arch, true saccular aneurysm, dilatation of the aortic ring and thickening of the aortic valves, following downward extension of the inflammatory process, are not infrequently to be observed.

Histologically, the lesion is marked, among other changes, by sclerosis of the adventitia and round cell foci in it, the latter often arranged round newly formed, thin-walled vascular channels, the granulomatous tissue extending into the media and, sometimes, into the subintimal region. Scattered through the vessel wall are collections of lymphoid and plasma cells with a sprinkling of epithelioid cells. Occasionally the center of such a focus is necrotic, and giant cells are arranged peripherally. These cellular composites are best interpreted as miliary gummas. There are other cases, however, in which similar foci include giant cells formed round foreign bodies, such as cholesterin crystals, and the resemblance to gumma is striking. In addition to all this, the media exhibits areas of fibrosis or of necrosis, the subintimal connective tissue is thickened and thrown into heaps, and the inner surface of the vessel presents depressions corresponding to scars produced by retraction of the underlying connective tissue. Finally, special stains reveal numerous breaks in the elastic fibers, the intervening muscle cells showing signs of advanced granular degeneration or actual necrobiosis.

The fact that the naked eye changes in this variety of arterial disease are so frequently found in association with classical signs of syphilis in other parts, and that the histologic alterations sometimes include genuine gummas, the occasional detection of spiral organisms in the vessel wall, the clinical history of chancre, and the frequent occurrence of a positive Wassermann reaction, combine to show that the lesion is of syphilitic origin. In fact, to deny its specific nature at the present moment is apt to be regarded as a pose in the direction of singularity. There are, however, contributing factors which, as far as we have been able to learn, have not been adequately dwelt on, and it is for this reason that we venture to record the observations which follow.

Out of several hundred examples of syphilitic aortitis observed at necropsy at the New York, Hudson Street and Bellevue hospitals, we have selected, quite at random, seventy cases, and have correlated the anatomic findings with the clinical histories.

Of the seventy cases, fifty-six, or 80 per cent., occurred in males.

The ages, grouped in decades, are given in Table 1, from which it is apparent that syphilitic aortitis is encountered oftenest between the ages of 30 and 50 years (71.4 per cent.).

TABLE 1.—AGES OF SEVENTY PATIENTS WITH AORTITIS

Ages	Number of Cases	Per Cent.
From 20 to 30	1	0.1
From 31 to 40	16	22.8
From 41 to 50	34	48.5
From 51 to 60	12	17.0
From 61 to 70	7	1.0

TABLE 2.—TIME BETWEEN INFECTION AND DEATH

Number of Cases	Lapse of Years	Number of Cases	Lapse of Years
1	10	4	25
4	12	2	21
1	17	1	22
1	19	1	32
5	20	1	40

Grouped according to years, the difference in point of time between infection by syphilis and death with well marked signs of syphilitic aortitis is given in Table 2.

3. Benda: Berl. klin. Wchnschr., 1906, xliii, 989.
4. Reuter: München. med. Wchnschr., 1906, liii; Ztschr. f. Hyg. u. Infectionskr., 1906, iv, 49.
5. Schmorl: München. med. Wchnschr., 1907, liv, 188.
6. Wright and Richardson: Rep. Massachusetts Gen. Hosp., 1909.
7. Longcope, W. T.: Syphilitic Aortitis: Its Diagnosis and Treatment, Arch. Int. Med., January, 1913, p. 15.
8. Crowell: Personal communication.
9. Aschoff: Pathologische Anatomie, ii, 77.
10. Brown: Personal communication.
11. Pearce, R. M.: The Wassermann Reaction in the Pathology, Diagnosis and Treatment of Syphilis, Arch. Int. Med., November, 1910, p. 478.
12. Darling and Clark: Jour. Med. Research, March, 1915, p. 1.

In twenty-four of the seventy cases, a history of syphilis was elicited during life. Grouped in decades, infection occurred as shown in Table 3.

TABLE 3.—OCCURRENCE OF INFECTION

Age	Number of Cases	Per Cent.
From 10 to 20	3	12
From 21 to 30	16	66
From 31 to 40	4	16
Not given	1	..

It is a matter of common knowledge that the cardiovascular lesions of syphilis are essentially those of comparative youth, so it is not surprising to find that, in our series, syphilitic aortitis was most commonly observed between the ages of 30 and 50 years (71.4 per cent.). In Longcope's series of sixty-three cases, the majority of the subjects were young, 80.9 per cent. being between the ages of 20 and 50 years.

TREATMENT

Of the seventy cases in our series, the history relating to treatment was obtained in twenty-four instances. Of this number, six received no treatment, nine were treated for a few days or weeks, two were under treatment for three months, three for from six to twelve months, two for over a year, and in two instances, the length of treatment was not recorded.

In twenty-one of our subjects in whom it was possible to determine the date of infection and the length of treatment, it was found that an average period of 20.5 years had elapsed between infection and death. In all of these cases treatment had been neglected or abandoned. In Cummer and Dexter's[13] series of twenty-seven patients there was an interval of 17.2 years between infection and the appearance of *symptoms*, in Longcope's[7] series of twenty-three patients an interval of 16.4 years, and in Deneke's[14] series of 200 cases an interval of 20.25 years. The interval of 20.5 years between infection and death, as established by our series of postmortem examinations, and that of nearly eighteen years, as shown by the combined cases of Cummer and Dexter, Longcope and Deneke, are even more closely approximated when it is recalled that, with the development of symptoms in syphilitic aortitis, the disease, for some unknown reason, pursues a rapid course, and death ensues within two or three years. Thus it appears that, even in untreated or neglected syphilis, involvement of the aorta is a late event. It is to be presumed, of course, that treatment is a highly important factor in the prevention of syphilitic aortitis. However, in a case in which the necropsy was done by one of us (Symmers) the subject, who was a physician, had been under intelligent antisyphiltic treatment for three years and, at necropsy, the aorta presented numbers of sacculated aneurysms and was an exquisite example of syphilitic aortitis from commencement to bifurcation.

OCCUPATION

The great majority of the men concerned in our series were of the type whose hours are long and whose work is physically strenuous. The occupations were distributed thus: iron worker 1, painter 1, brakeman 1, engineer 2, laborer 6, cook 2, porter 2, bricklayer 3, waiter 4, longshoreman 2, janitor 3, salesman 3, watchman 1, sailor 2, blacksmith 1, elevator man 2, teamster 2, orderly 1, cabinet maker 1, bartender 1, cigar maker 1. Among the women were 5 housewives, 1 cook and 1 nurse.

Among occupations such as these it must be that there are frequent periods during which the blood pressure in the aorta is raised, often suddenly, as in heavy lifting, thus predisposing to stretching of the vessel wall, to rupture of the elastic fibers and to advancement of an inflammatory process which, in the most favorable circumstances, is never given the mechanical benefit of rest. It is significant that, in one of our cases, necropsy revealed numerous threadlike lacerations in the intima of the aorta due, apparently, to the fact that, in the agonal hours, the patient had vomited violently and without appreciable intermission.

HABITS AND INTERCURRENT DISEASES

Of the 70 patients, forty-six, or 65.7 per cent., admitted addiction to the immoderate use of alcohol. A few were confirmed coffee drinkers. The influence of tobacco could not be determined.

In seventeen cases (24.2 per cent.) there was a history of definite, often repeated attacks of acute rheumatic arthritis. This is significant when considered in connection with the fact that acute rheumatic arthritis of itself is known to cause inflammatory changes in the normal aorta. It is safe to assume that the same is true of other infections. For example, one of our subjects, a man, aged 60, had contracted syphilis at the age of 20, and discontinued treatment six months later. He had had one attack of acute rheumatic arthritis. At necropsy the arch of the aorta and the abdominal aorta showed extensive syphilitic changes, and the hyaline patches had undergone necrosis, producing areas of erosion. Friedländer's pneumobacillus was isolated in pure culture from the blood. Infections other than syphilis must, therefore, exert an inimical influence on an aorta already the seat of structural changes.

A history of malaria was elicited six times, smallpox twice, chronic bronchitis with winter cough once, and recurrent gout, typhoid fever, yellow fever and chronic dysentery once each.

ANEURYSM AND SCLEROTIC AORTIC VALVULITIS

In our seventy cases, aneurysm occurred twenty-one times, or in 30 per cent., a figure which is in close agreement with that of F. H. Welch[15] who, in fifty-six cases of fatal syphilis, found aortic disease in 60.7 per cent. and aneurysm in 32 per cent. While it is apparent from this that considerable numbers of all patients with syphilitic aortitis eventually develop aneurysm, the converse is equally striking, namely, that, in the aorta, from 75 to 90 per cent. of all aneurysms are directly traceable to syphilitic aortitis (Heller,[1] Puppe[16]).

In eleven of our seventy cases (15.7 per cent.), the first portion of the arch of the aorta was dilated without attendant evidence of thickening and retraction of the aortic cusps, and, of this number, five, or 45.4 per cent., presented clinical signs indicative of relative insufficiency at the aortic ring.

For many years clinicians have been aware that there is a relationship between a group of cases of aortic regurgitation and the so-called parasyphilitic

13. Cummer, C. L., and Dexter, Richard: The Relation of Aortitis to Syphilis, and the Importance of Its Recognition, THE JOURNAL A. M. A., Aug. 10, 1912, p. 419.
14. Deneke: Deutsch. med. Wchnschr., 1913, xxxix, 541.
15. Welch, F. H.: Lancet, London, 1875, ii, 769, 899; Med. Chir. Tr., 1876, lix, 59.
16. Puppe, quoted by Pearce (Footnote 11).

diseases, paresis and tabes dorsalis. While syphilis as the underlying cause of both paresis and tabes has long been recognized, it is only within comparatively recent years that the same factor has been invoked to explain these and certain other cases of aortic regurgitation. Thus, in 1902, Fabris[17] pointed out that syphilitic aortitis not uncommonly eventuates in simple dilatation of the aorta, or in actual thickening and retraction of the aortic cusps as a result of downward extension of the inflammatory process, producing, in either event, phenomena referable to insufficiency at the aortic orifice. This observation has since been confirmed by Saathoof,[18] Mönckeberg,[19] Longcope[20] and others. In Longcope's series of seventy-six uncomplicated cases of chronic aortic valvulitis, twenty-one, or 34 per cent., were associated with syphilitic aortitis. In our series, nineteen, or 27 per cent., were attended by sclerosis and retraction of the aortic valves.

SUMMARY

1. The mesaortitis of Heller and Döhle is essentially a syphilitic lesion, but its production is favored by certain other factors, among which age, sex, the length and character of antisyphilitic treatment, intercurrent disease, especially infections such as acute rheumatic arthritis, alcoholism, and occupations necessitating prolonged physical strain play a not unimportant rôle.

2. (*a*) Syphilitic aortitis occurs most often in males — in 80 per cent. of our series — a fact which assumes additional importance when taken in connection with occupational influences.

(*b*) Syphilitic aortitis is a lesion of comparative youth, occurring oftenest between the ages of 30 and 50 years — in 71.4 per cent. of our cases.

(*c*) In untreated or neglected syphilis, the average interval between infection and death with anatomic confirmation of the existense of syphilitic aortitis is 20.5 years, from which fact it is apparent that, even in the least favorable circumstances, the lesion arises late in the course of syphilis.

3. (*a*) About 30 per cent. of all patients with syphilitic aortitis develop aneurysm.

(*b*) At least 15 per cent. of all cases of syphilitic aortitis are attended by dilatation of the first portion of the aorta.

(*c*) About 30 per cent. of all cases of syphilitic aortitis eventuate in sclerosis and retraction of the aortic valves.

(*d*) Leaving out of consideration the occurrence of such clinical phenomena as angina pectoris and cerebral disturbances referable to occlusion of one of the larger branches of the aorta, such as the innominate or left carotid artery, it appears to be probable that few cases of syphilitic aortitis pursue a course free from subjectively appreciable or even detectable clinical manifestations.

17. Fabris: Gaz. méd. ital., 1902. Kaufmann, Spez. Path. Anat., Ed. 6, p. 78.
18. Saathoof: München. med. Wchnschr., 1906, liii, 2050.
19. Mönckeberg: Med. Klin., 1905, i, 1027.
20. Longcope, W. T.: The Association of Aortic Insufficiency with Syphilitic Aortitis, THE JOURNAL A. M. A., Jan. 8, 1910, p. 118.

The Barrel Chest.—Nothing is less like a barrel than the "barrel chest." Its most striking characteristic is its greatly increased anteroposterior diameter, so that it approaches the form of the infant's chest.—Richard C. Cabot.

THE REACTIONS AND RESULTS OF TREATMENT IN CEREBROSPINAL SYPHILIS

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The purpose of this paper is to present the relationship between the discomforts from intravenous-intraspinal treatment and the results in terms of the individual's increased or restored economic value to the community.

The material on which the following observations are made consists of thirty-eight cases, watched over periods varying from three months to three years. Fortunately the variety in clinical types has been especially great, so that in this small series almost all the classical forms as well as numerous unusual examples of cerebrospinal syphilis appear. To these thirty-eight patients were given 1,126 intravenous injections and 355 intraspinal injections of medicated serum.

The technic of administration was the usual one. The spacing of the doses was varied with the individual. On the basis that it was desirable to give every patient the maximum amount of the drug, each was started on a weekly injection, usually following a couple of weeks' mercury preparations, of 0.3 gm. of salvarsan, increasing from 0.4 in the early stages of the work to 0.6 gm.

DISTURBANCES

In considering the question of distress to the patient caused by the intravenous injections, every subjective and objective change from normal conditions, no matter how trivial, has been recorded. Table 1 shows the different kinds of reactions met and their relative frequency. Obviously the most frequent is the so-called anaphylactoid phenomenon appearing as slight flushing of the face, urticaria, or more severe shock. This is a remarkable occurrence and one which deserves special consideration. About 55 per cent. of all the cases show the condition at one time or another during the treatment, but in the total of 1,126 injections, its incidence is about seventy-three, or 6.5 per cent. It has occurred both in men and in women, and the age of the subject seems to have no bearing. In most cases the phenomenon occurs at or after the fourth injection, rarely at the second, never at the first.

TABLE 1.—DIFFERENT KINDS AND RELATIVE FREQUENCY OF REACTIONS

Reactions	Number	Per Cent.
Slight flushing	39	3.46
Acute shock	34	3.1
Urticaria	12	1.1
Nausea	13	1.2
Vomiting	30	2.7
Diarrhea	13	1.1
Chill	7	0.6
Malaise	14	1.3
Pain increase	4	0.3
Pain or swelling in veins	5	0.4
Thrombosis	3	0.2
Jaundice	2	0.1
Dermatitis (AS)	2	0.1
Herxheimer (rash or nodes)	10	0.9
Edema	1	0.09

Usually if the reaction has not appeared in a given individual by the fourth or fifth injection, it does not occur. In one exception it showed first at the tenth injection. When the patient has had one reaction — that is, has become hypersensitive to the drug — the chances are great that each subsequent treatment will be accompanied by the phenomenon in greater or less

severity. Many patients presenting this condition of hypersensibility report tasting or smelling the drug almost instantly after the inflow into the vein begins.

The symptoms of this curious phenomenon vary considerably in intensity but follow a very constant type. In the mildest cases there is simply a faint suffusion of the face, so slight that it passes unnoticed by the patient. More striking are the examples in which subjective sensations of an unaccustomed and often distressing nature cause the patient to move restlessly and cough once or twice, or draw a deep breath. Usually a suffusion of the conjunctival vessels precedes this restlessness and gives warning of an approaching reaction. The patient stops talking and begins to move his head a little from side to side, clears the throat frequently, and then often says with rather a suppressed voice, "I feel sort of queer." The suffusion deepens rapidly and the face swells, and the red color changes to cyanosis, and occasionally almost blue. A little later the blueness gives place to ashen gray, which may be of an extreme grade. While the color changes are passing over the face the respirations are short and rapid, and the patient is evidently working hard to get as much air as he wants. He complains of a sense of oppression beneath the sternum and occasionally of feeling his heart beat heavily. As a matter of fact, the cardiac action remains undisturbed in many cases throughout the reaction, though great pulse weakness is met occasionally. The whole disturbance lasts from three to five minutes and passes off gradually, leaving the patient rather limp and discouraged. Very frequently vomiting occurs during the succeeding hours. Blotchy, urticarialike spots have appeared in two or three cases almost immediately after the termination of the shock.

To a certain extent the disturbance may be prevented by very slow administration of the drug. Indeed, with some cases one may cause the shock to appear or disappear merely by starting and stopping the inflowing salvarsan. Other methods have been suggested for the control of this reaction, such as epinephrin given intramuscularly ten minutes before the treatment, and $\frac{1}{100}$ grain of atropin during the shock. While in some cases the remainder of the injection can be given, by pausing for five or ten minutes, it has been recently my habit to stop the injection the moment symptoms begin to appear. This reaction is undoubtedly the worst that patients have, and while it is usually of trivial significance, it may be of very serious nature. In one case not in this series, breathing stopped entirely and artificial respiration was effectively resorted to. Not infrequently urticarial eruptions appear within five to ten minutes. That the nature of this strange reaction is anaphylactic there seems to be little question. Many clinical observers have noted these symptoms, and Swift,[1] in a conclusive series of animal experiments, has demonstrated that the combination of guinea-pig serum and salvarsan produces a substance capable of sensitizing and then shocking the guinea-pig. By the addition of salvarsan, the homologous serum developed the characteristics of a foreign protein.

The other kinds of reactions finding place in Table 1 are very infrequent, gastro-intestinal upsets being the commonest. Vomiting occurred in 2.7 and diarrhea in 1.1 per cent. of the cases. The former usually occurs within five or six hours after the injection, and is associated with the latter. Because these gastro-intestinal upsets appear only in certain individuals, and following the administration of anything more than a small or limited dose, it has seemed to me that they were purely arsenical toxic effects.

The other undesirable effects are so slight and infrequent as to make discussion of them unnecessary.

DISCOMFORTS

Turning now to the discomforts incident to the intraspinal treatment with salvarsanized serum, we find a great array of reactions, as shown in Table 2. First of all, pain stands out definitely ahead of all others. This pain varies in intensity from slight twinges to severe wracking pain which can be controlled only by morphin. Fortunately this end of the scale numbers but few victims, but the middle degrees are felt by a great majority of the patients. In a total of 355 injections there were 104 reactions of all sorts (26.4 per cent.); of these, seventy-eight (19.1 per cent.) were painful. If the number of patients is considered rather than the number of injections, it is seen that 80 per cent. have pain, not at every injection necessarily, but at some time during their course of treatment.

TABLE 2.—DISCOMFORTS INCIDENT TO THE INTRASPINAL TREATMENT WITH SALVARSAN SERUM

	Number	Per Cent.
Total injections	355	...
Total reactions	104	26.4
Pain in the legs	59	13.8
Headache	19	5.3
Odd sensations in the legs	5	1.4
Numbness in legs and perineum	5	1.4
Nausea	3	.8
Vomiting	7	1.9
Coma	1	.3
Vesicle paresis	1	.3
Paraplegia	1	.3
Increased ataxia	2	.5
Sensations in head	1	.3
Weakness	1	.3
Psychic exaltation	1	.3

The pain may occur at various periods in the whole procedure and in various parts of the body. Occasionally a sharp lancinating pain is felt at the moment of puncture. This pain shoots down one or both legs and often to the testicles. It is momentary and is often spoken of by the patient as an electric shock. Whatever the cause — possibly piercing a nerve fiber — it is not very frequent.

The second type of painful reaction is that in which the pain begins during the time of inflow of serum. It is occasionally felt in the sciatic region, occasionally at the site of puncture. Rarely severe, it lasts only a minute or two, and passes off as insidiously as it began. It has never been severe enough to cause the patient to urge that the treatment be suspended.

The third type is perhaps as common as any, and consists of pain appearing within a few minutes after the serum has run in and the needle has been withdrawn. This pain often is fairly severe, usually felt in the thighs, sometimes in the calves and feet. If untreated it may last several minutes and disappear spontaneously, or it may linger for half an hour or longer. Sometimes it comes and goes with more or less severity during the night following treatment. The treatment of this type will be considered later.

The fourth type differs from the preceding in that it occurs only in cases of painful tabes and consists in an exacerbation of the particular individual's special pains. These stimulated pains may be very bothersome for several days after the treatment.

1. Swift, H. F.: Anaphylaxis to Salvarsan, THE JOURNAL A. M. A., Oct. 5, 1912, p. 1236; Intraspinal Therapy in Syphilis of the Central Nervous System, ibid., July 17, 1915, p. 209.

The fifth type is more serious, and a part of a general reaction of considerable severity. In this group there is usually no pain at the time of the injection or following it for several hours. Then the patient begins to feel chilly and uncomfortable, and there is general malaise and headache. Soon a moderate temperature rises. The headache is violent, and the pains in the back and legs often become intense. Objectively the patient presents the picture of meningism. The neck is stiff and Kernig's sign present in more or less completeness.

In one of the three cases coma supervened. The cerebrospinal fluid in this case and in one of the severe instances of Group 3 was examined within from six to eight hours after the serum injection. Both fluids showed a slight serum discoloration and a great increase of cells, over 2,000 in one case and as high as 30,000 per cubic millimeter in the other. These cells are not true polynuclears, but multilobed cells, probably of the class described by Pappenheim as the macrophagic clasmatocytes of Marchand, having their origin in the tissues and not from the blood.

The explanation of the cause of the pain in the different groups can be, of course, only hypnotic. Two suggest themselves:

1. Irritation, either chemical or physical, or both. It has been thought that pain was less frequent when serum diluted with saline was used — say, a 40 or 50 per cent. serum — than when pure 100 per cent. serum was injected. For the past two years only pure serum had been used in this series. Before that time 40 or 50 per cent. serum was given. It does not seem to me that pain is any more noticeable now than in the previous period.

Autosalvarsanized serum and serum prepared by Ogilvie's[2] method, provided not over 0.00025 gm. is added, are equally irritating or nonirritating as the case may be. Serum, however, to which mercury has been added by Byrne's[3] method, seems to have been more irritating than the salvarsanized preparation. This statement must be taken with reservation though, because the number of mercurialized injections in this series is small.

2. The other suggestion for explaining the very severe reactions is that they are anaphylactic in nature. If the demonstration be true that salvarsanized guinea-pig serum behaves as a foreign protein to that animal, it is quite possible that the same thing may be true of man. Furthermore, Gay,[4] Besredka[5] and others have demonstrated that animals may be both sensitized and shocked by the subdural route.

Recently the plan to provide a stock mercurialized horse serum has been brought forward, the idea being to give the physician a convenient serum preparation for intraspinal injection. The undesirability of such a serum is obvious. It has been shown that even a homologous serum can be rendered as dangerous as a foreign protein by the addition of salvarsan (Swift[1]), and on this basis some of the rare and severe reactions following intraspinal injection with salvarsanized human serum have been explained as anaphylactic in nature. Furthermore, there is another aspect of the problem which suggests itself. Longcope[6] showed that repeated injections of foreign protein, which produced successive sublethal anaphylactic shocks, caused definite tissue change in heart and kidneys. In view of these facts, the wisdom of repeated intraspinal injections of foreign serum should be gravely questioned.

That the cause of the pain and general reaction is a transient one, at least so far as visible lesions of the membrane and cord are concerned, is demonstrated by the one opportunity presented at necropsy to view the spinal canal. The patient had received forty-one intraspinal injections of 100 per cent. serum in twenty-six months. The outer surfaces of the cord and membranes were smooth, pale and glistening as normal throughout their entire length. The microscopic sections of the cord are not yet ready for inspection.

In most cases the pain is so transient and light that no treatment is needed. When the pains following the injection immediately (Group 3) are severe, deep muscular massage of thighs and calves relieves it magically. The specialized pains (Group 4) in painful tabetics are best controlled by heat to the lumbar spine and along the course of pain, and by the administration of phenacetin, pyramidon, and caffein and codein. Very rarely morphin is needed.

In the extremely rare cases, puncture may be necessary to relieve the pain.

In Table 2, "odd sensations in the legs" refers to certain sensations described vaguely by a few patients. These sensations do not amount to pain, but are sufficiently uncomfortable to attract the subject's attention. The next group, "numbness in legs and perineum," is a perfectly definite sequel to introducing directly too much salvarsan or neosalvarsan. Several French observers reported that they had seen this curious numbness usually associated with retention of urine. The symptoms persist for a long period of time, and in two or three cases appear to be permanent.

It is obvious, therefore, that the intravenous-intraspinal method of treatment is not devoid of difficulties for the patient. But perhaps a fair criterion of the real importance of the distressing features of the method is the willingness of the patients to subject themselves repeatedly, over a long period of time, to the intraspinal injections. In only a few instances has it been evident that the patients dreaded the treatment. With very many cases there is practically no discomfort worth recording; but in a fair proportion the treatment is distinctly of a heroic nature.

BENEFITS FROM THE TREATMENT

When we come to consider how much good the patients derive from the intensive treatment under discussion, it is necessary to determine some state of being which can be looked on as a goal worth reaching. Working capacity, or the individual's economic value to the community, is undoubtedly the severest test to which human beings are put. By their response to this trial they succeed or fail in the struggle of life. The question arises, therefore, How well have these patients been helped to return part way or wholly to their level of usefulness?

At the outset, in the various forms of cerebrospinal syphilis, we are faced with two symptom-producing and incapacitating factors. In the first place, most of the cases have been of long standing so that some degree of destruction of nerve tissue may be assumed. Secondly,

2. Ogilvie, H. S.: The Intraspinal Treatment of Syphilis of the Central Nervous System with Salvarsanized Serum of Standard Strength, THE JOURNAL A. M. A., Nov. 28, 1914, p. 1936.
3. Byrne, C. M.: The Intradural Administration of Mercurialized Serum in the Treatment of Cerebrospinal Syphilis, THE JOURNAL A. M. A., Dec. 19, 1914, p. 2182.
4. Gay, Southard and Fitzgerald: Jour. Exper. Med., 1909, xxl, 21.
5. Besredka and Lissofsky: Compt. rend. Soc. de Biol., 1910, lxviii.
6. Longcope, W. T.: The Effect of Repeated Injections of Foreign Protein on the Heart Muscle, Arch. Int. Med., June, 1915, p. 1079.

there is a factor of the presence in the tissue of the active spirochete and its toxins. Obviously, symptoms due to the former cause are not remediable by chemoserotherapy, though exercise and reeducation of muscle groups may help considerably. But it appears that, even in cases of long standing, there is often a large factor of active syphilis. If this be removed by adequate treatment, there is frequently surprisingly little disability left which is dependent on chronic change. Perhaps the shortest and clearest way to demonstrate what has been done with these thirty-eight cases is to present the results in a small table, as Table 3.

The loss of working capacity depends in the different types on various factors. In those cases with cerebral involvement in which the symptoms are psychic disturbances, the individual may become useless in his work most insidiously. Several patients have told me of lack of concentration or especially of lack of power to make decisions. In the latter instance a man goes on from time to time putting aside decisions, often making elaborate explanations in his own mind why the point at issue had better be postponed temporarily. At first this procrastination of decisive mental effort passes unnoticed by the office force, but gradually becomes not merely apparent but also embarrassing to the patient's co-workers. So his usefulness is little by little undermined until one day he finds that he cannot even do the routine and becomes almost dazed. Such cases are frequent; there are three or four in this series.

TABLE 3.—RESULTS OF TREATMENT IN THIRTY-EIGHT CASES

Condition	Before Treatment	After Treatment*
Useless	26	6†
Working part time or suffering	11	8
Working full time	1	22

* Two died.
† Two, optic atrophy; two, paretics (hopeless); one, paraplegia (improving); one, cystic glioma (dead).

Usually associated with the increasing specific debility in work, as just described, there is a general nervous state, perhaps best called neurasthenia. The patients are anxious, apprehensive and often say "they are just nervous all the time." As they have become aware of their specific inability to work at a time when this general nervousness is at its height, it is extremely difficult to restore confidence in returning specialized powers. Their nervousness occupies their entire attention, so that they put off by every possible excuse the day of returning to their special occupations. Clearing up the syphilitic process brings back the lost powers of concentration and decision, but the neurasthenic habit of postponement of mental effort must be broken by other means. Encouragement, reeducation and mental and physical calisthenics are the main forces in the hands of the physician. But more important perhaps than all is to require the patient to do some work, no matter what, during the period of treatment. The intervals during the injections are long, and for the patient conducive of introspection. Many patients can go back to work on part time. Usually a word to the employer or to the office force makes this easy of accomplishment. Four such patients have been able to go back effectively to their work. One of these has since died of cerebral hemorrhage.

The true paretic, whatever that be, is apparently not helped by the treatment. Two of the four patients, however, when first seen were classical pictures of paresis. If this condition is not true paresis, the difference must be one of degree, and perhaps the only way to differentiate them is by their response to treatment. One case of this type tends to relapse when untreated for three or four months, as though it occupied a middle position between the cases which clear up rapidly and the unimproved hopeless cases.

The locomotor ataxia group become useless in their business, either through pain or inability to walk. Either of these is a much more definite and obvious cause than the others have described.

Degrees of pain which are incapacitating are different with each individual, so that some patients are able and willing to go back to work sooner than others. Ataxia patients in whom the ataxia is of long standing improve less than when the onset is sudden, as a rule. The skill and assiduity with which a patient practices his exercises is a distinct factor in determining how soon and to what extent he can return to his work. The self-consciousness and embarrassment of the tabetic also is often a very potent cause of his failure to return to his occupation.

TABLE 4.—DURATION AND AMOUNT OF TREATMENT

Case	Months	Intravenous	Intraspinal	Working Capacity		Biologic Tests	Shock, Intravenous	Pain, Intraspinal
				Before	After			
14	20	14	9	0	W	C—	0	+
49	4	10	0	W	W	C	+	0
211	2½	6	0	0	0	C—	+	0
176	16	9	9	P	W	C—	0	+
17	6	18	9	0	P	C—	0	+
103	9	29	2	0	W	C	+	+
158	5½	14	5	P	P*	C—	0	+
93	15	33	8	0	W	C—	+	+
94	13	22	4	0	W	C	+	+
89	9	21	11	0	P*	C—	+	+
21	2	5	2	0	0	+	+	+
165	9	24	0	0	W	C	+	0
151	7	28	12	P	W	C	0	+
76	17	44	8	0	W	C	0	+
95	18	41	7	0	W	C	+	+
96	9	19	7	0	0	C	0	0†
124	17	21	8	0	W	C	0	+
208	3	10	2	P	W	C—	+	+
140	4	17	8	0	W	C—	0	+
183	5	23	10	P	W	C—	0	+
91	13	19	3	P	W	C—	+	0
90	16	31	12	0	P	C—	+	+
26	19	24	10	0	0	C—	0	+
44	3	7	7	0	0	+	0	+
22	19	39	19	P	W	C	+	0
173	7	17	6	0	P	C—	+	+
108	6	20	8	P	W	C	+	+
16	19	33	0	P	W	C—	0	0
179	2	6	3	P	W	C—	0	+
153	6	25	13	0	P	C	+	+
18	12	16	14	0	W	C—	+	+
12	21	62	24	0	P	C	+	0
25	28	40	18	0	W	C	+	0
129	2½	7	7	0	0	C—	+	0
24	26	77	41	0	0 *	C	+	+
102	27	48	38	0	W	C—	0	+ ‡
66	10	22	11	0	P*	C	+	0
201	7	20	10	0	0	+	0	0

* Died.
† Severe spinal shock with coma; no pain at any other injection.
‡ Since going to press this patient suddenly became ineffective at his work and has rapidly deteriorated in the course of two or three weeks into a condition of advanced, bedridden general paresis.
W, full-time work; P, part-time work; C, all tests clear; C—, all tests almost clear.

In Table 4 is set forth a complete statement of the length of time and the amount of treatment these cases have received. In parallel columns are indicated the treatment distress and result. It is clear that improvement bears direct relation to the length and intensity of the treatment. When much treatment has been given without the usual improvement there is some other obstructive factor (as optic atrophy, morphinism, or glioma).

SUMMARY

The purpose of the paper has been to show the number and severity of undesirable reactions to treatment, on the one hand, and the results in terms of working capacity, on the other.

The severest reaction to intravenous injections is of the anaphylactic type. The most frequent reaction to the intraspinal injections is pain. The severest is an aseptic meningitis, which may be anaphylactic in origin.

Twenty-six patients out of a total of thirty-eight were economically useless before treatment. After treatment twenty-two were back on full-time work. Rapidity and degree of improvement depend directly on the intensity of treatment. It is important to keep patients at work during the months of treatment.

116 East Sixty-Third Street.

INTRASPINAL ADMINISTRATION OF MERCURIALIZED SERUM

IN THE TREATMENT OF SYPHILIS OF THE NERVOUS SYSTEM *

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The object of this paper is to call attention to some of the work which we are doing in neurology at the City Hospital; it is not an effort to introduce a new therapeutic measure or disparage an old one. Rather, it is a record of work done. The war has made salvarsan so difficult to obtain, and its price so prohibitive, that we have been obliged to seek other means in the treatment of syphilis of the nervous system. Accordingly, last summer we tried the intraspinal administration of mercury. This paper is a recital of the treatment, and a record of the results. Such a paper can be, to my way of thinking, only in the nature of a preliminary report, for several years must elapse, and hundreds of cases must be treated and observed, before conclusions can be reached that are definite and of value. A great deal of credit for this work is due Dr. Blake F. Donaldson, who at the time was my house physician at the City Hospital, and who carried out the details and the technic.

Irrigation of the spinal canal with 1:30,000 mercuric chlorid solution has already been practiced as a postoperative measure. Ravaut, in 1913, in one of the Paris journals, reported the injection of mercurial salts into the dural space for cerebrospinal syphilis, and only a year and a half ago, Byrnes of Johns Hopkins reported the results of thirty-two cases of cerebrospinal syphilis treated by the intradural administration of mercurialized serum.

The cases which I report are forty-five in number. The patients were all treated in my service in the wards of the City Hospital on Blackwell's Island. Forty were given intraspinal injections of mercuric chlorid, and five were given sublamin injections, so that in all there were given 100 injections of mercuric chlorid and thirty-three injections of sublamin (ethylendiamin-mercury sulphate). These patients at the same time were given every week intramuscular injections of mercuric salicylate, and in the very early ones intravenous injections of salvarsan.

The cases treated comprised cases of tabes, general paresis, cerebrospinal syphilis, taboparesis, clinical tabes (that is, tabes with a negative serology) and syphilitic hemiplegia.

The treatment was given in all except five cases as follows:

About 50 c.c. of blood were obtained readily from the patient's arm with a needle of large caliber, and collected in a sterile cylinder, *preferably*, four hours after an intravenous injection of salvarsan. The blood was slanted, the clot separated, and then left over night in the ice-box. The next morning a sterile centrifuge tube (containing about 13 c.c.) was readily filled with clear serum, and was then centrifuged for five minutes. A few red blood cells were collected at the bottom of the tube, and the supernatant fluid poured (sterilely) into a sterile, freshly washed cylinder. To this one-fiftieth grain of mercuric chlorid was added. It was prepared as follows:

One gm. of Merck's mercuric chlorid was weighed out carefully, and added to a liter of sterile distilled water, which was then brought to the boiling point (when the mercuric chlorid would completely dissolve). Of this solution, 1.3 c.c. contains approximately one-fiftieth grain of mercuric chlorid.

The mixture was then added up to 30 c.c. with sterile saline, and inactivated for half an hour at 58 C. It was then injected within an hour. The injection was given with the patient lying on his side. A 30-c.c. syringe was used, and the fluid run in practically by gravity alone. The foot of the bed was elevated for one hour after the injection, and phenacetin was used liberally for pain.

In the other five cases mentioned above, the mercuric chlorid solution was mixed directly with about 20 c.c. of spinal fluid, and the whole immediately injected. In three of these cases the reaction seemed more severe than usual; the cell count was in two cases increased markedly after two weeks. This technic, though much easier, does not seem in the exceedingly limited number of cases to be as good as the other.

The ten patients with general paresis treated showed less improvement than almost any of the others. One half of them, five, showed no change; two became worse. In only three cases was there any marked improvement. These three patients evinced increased strength and diminished tremor. In none were there any reflex changes, but in four of the ten both the cell count and the globulin were diminished.

Of the eighteen patients with typical tabes dorsalis, only four showed no improvement. The remaining fourteen in every instance were helped. One patient showed marked improvement in his general condition, but little change in his reflexes. Nine showed marked subjective improvement with complete freedom from pain. Two of these eighteen died, but as they were moribund when admitted and were treated really as a last resort, it is not fair to record them in the judgments of this form of treatment. So far as serology was concerned, in these eighteen cases, eight, that is, almost 50 per cent., showed a distinct reduction in both globulin and cell count. The improvement in these cases was one in which there was evidence of gain in weight and in strength, a cessation of pain, a regaining of bladder control, and an improvement in the spinal fluid content.

There were three cases of cerebrospinal syphilis. One patient showed no improvement whatever, the remaining two showed marked reduction in the cell count, and one, a Chinaman, gave very marked evidences of both objective and subjective improvement. At the beginning of the treatment, he was bedridden, greatly emaciated, incontinent, and apparently dying. His mental condition was one of confusion and dementia. From the very beginning he began to improve, holding his improvement, and steadily and persistently adding to it so that at the end of two months he was up and working in the ward.

* Read before the Section on Medicine, New York Academy of Medicine, Nov. 16, 1915.

Five patients with taboparesis were treated. Two of these showed no improvement and no change. Of the remaining three, two showed a marked change both objectively and subjectively. The reflexes, as in all of these cases, remained stationary. In two of the five there was a reduction in the cell count and in the globulin.

In the five cases of clinical tabes with negative serology, the cell count was low throughout, and therefore of course no change was manifest in the cell count and globulin. Of these five patients two showed slight subjective improvement, and two remained stationary. One improved a very great deal. She showed marked improvement, regaining the use of her legs and control of her bladder.

There were four cases of syphilitic hemiplegia. Improvement was evident in two. One case remained stationary, one patient died at the end of twelve days with exaggerated dementia, and an aortic leak which decompensated. In one case the cell count was reduced. The two patients who improved did so objectively, that is, the improvement which one would normally expect in a paralytic was hastened and possibly augmented.

A general summary, then, of the forty-five cases treated would give the following results: Six patients showed marked objective improvement as regards the general conditions; nine showed marked subjective improvement; twelve showed some improvement subjective, but it was slight; thirteen showed no improvement; two became worse; three died.

In seventeen of the cases there was a well marked reduction in the cell count and in the globulin, the Wassermann reaction not being readily changed.

The following cases, seven in all, I have been able to follow from the beginning to the present moment. I can, therefore, go into detail regarding them, and will give the accurate history of them, together with the physical and laboratory findings.

REPORT OF CASES

CASE 1.—M. G., an Irish housewife, aged 56, who entered the hospital March 10, 1915, and whose chief complaint was severe shooting pains in the legs, had a negative family history, so far as tuberculosis, cancer, syphilis and sanity were concerned. She gave a fairly straightforward personal history, never having been pregnant, using beer in moderation, and positively denying syphilis. Her present trouble began in September, 1913. She first noticed a weakness and incoordination of her extremities, together with shooting pains in the legs. She had a little trouble in starting the urine, and occasionally had been bothered with diplopia. At the time of admission, she had had no antisyphilitic treatment. The physical signs that this patient showed were equal, but Argyll Robertson pupils, marked ataxia of both upper and lower extremities, and absent knee jerks. She was very ataxic, that is, unable to stand without support. There was no mental impairment, there were no tremors, and there was no involvement of speech. The case was one of tabes.

A Wassermann test made on the blood, July 7, 1914, ten months before admission, was doubtful. Sept. 16, 1914, it was weakly positive. The laboratory reports made just before treatment was instituted were as follows:

The lumbar puncture was made March 11, 1915. The blood was doubtful, the spinal fluid was positive, and there were 24 cells to the cubic millimeter. On that day, the first intraspinal treatment of 0.0003 gm. of salvarsan was given. This was followed by a marked increase in the shooting pains, severe headache, and vomiting which lasted four days.

March 25, another lumbar puncture was made, which showed a positive spinal fluid, and a cell count of 36. This was, as you see, more than on the previous puncture, and was in accordance with the increase in the pains, the headache and the vomiting On this day, an intraspinal dose of sublamin was given; the amount was 0.0013 gm. Again a reaction followed, but not so severe as on the preceding dose.

May 25, another puncture was made. The spinal fluid was still positive, the globulin was plus, and the cell count had dropped to 4. On this day, a dose of mercuric chlorid was given intraspinally, the amount being 0.0013 gm., this being followed by marked increase of pains which, however, lasted only twenty-four hours.

October 25, another puncture was made. This time the spinal fluid proved negative, the globulin was negative, and the cell count dropped to 3. To summarize, then, the results of the treatment in the case of this patient, the first injection after a very severe reaction afforded marked relief. Each injection was followed by a reaction in which the pains were worse, but on each successive injection, the period of the reaction was shortened, and finally, at the end of it, the patient experienced considerable relief. The physical examination showed no change in its findings throughout the entire time. The cell count and the globulin became normal, and on October 25, the patient was fairly comfortable, in a weak general condition, and with occasionally a few pains in the legs, but not nearly so severe as before the treatment began. This patient, in other words, showed excellent subjective improvement.

CASE 2.—L. G., a German workman, aged 50, whose chief complaint was shooting pains in his legs, had a negative family history, and his personal history showed only malaria, and moderate beer drinking. He admitted a specific infection of twenty-five years ago. He had no remembrance of any secondary symptoms, and probably had no treatment other than local. His present trouble began eighteen months before admission, with a weakness in both legs. This was followed by slight ataxia, difficulty in starting the urine and severe shooting pains in the legs. The pains were intermittent, and became very violent. The patient lost 40 pounds in weight. On admission he showed irregular and equal pupils, the right Argyll Robertson. His hearing was impaired in both ears, his knee jerks were absent, his gait was ataxic, and he had a Romberg. The ataxia was quite marked in the legs, but there was very slight, if any, ataxia in the arms.

March 10, the spinal fluid was doubtful, the blood was doubtful, there were three cells, and the globulin was plus-minus. On that day the patient received an intraspinal injection of mercuric chlorid, 0.0013 gm. April 4, the spinal fluid was negative, the cell count 33, and the globulin was plus-minus. On that day the second injection of mercuric chlorid was given of the same strength as the first. Two weeks later, April 20, the spinal fluid was negative, the cell count 23, and the globulin plus-minus. On that day another intraspinal injection of mercuric chlorid of the same strength was given. This patient experienced marked relief from pain after the first treatment. He gained about 10 pounds in weight, and said that he felt much stronger. There was, however, no change in the physical signs, and no improvement in the hearing, vision, or in the starting of the urine.

September 28, the spinal fluid was negative, and the globulin was plus-minus, but the cell count had dropped to 6. The patient had only occasional slight pains in the legs. There was no progression of the other symptoms, but, on the other hand, there was no improvement. In other words, the treatment for some weeks increased the cell count, and then brought it back to where it was before. The first treatment diminished the intensity and duration of the pains in the legs, but gave no change in the reflexes, nor did it offer any objective improvement in the various symptoms of which the patient complained.

CASE 3.—E. W., an American actor, aged 48, whose chief complaint was shooting pains in the legs, and ataxia, with negative family history, admitted specific history in 1892, followed by secondary symptoms. He was treated for a short time by mouth. He had smoked opium constantly for fifteen years, but stopped in 1911 of his own accord. When the ataxia and shooting pains developed in 1912, he took three

injections of salvarsan immediately, and a more or less continuous course of intramuscular mercury. On admission he showed contracted but equal pupils, regular, with a loss of reaction to the light: in other words, Argyll Robertson pupils. There was no impairment of either memory or mind. The knee jerks were absent. There was slight ataxia of the upper extremities, a marked Romberg, and the patient had to depend on a cane for walking. In this patient, six examinations were made of his spinal fluid, and he was given four intraspinal injections.

March 13, the spinal fluid was positive, with 23 cells; the globulin was one-plus. On that day he received an intraspinal injection of sublamin 0.0013 gm. March 24, his spinal fluid was positive, the globulin one-plus, the cell count 19. On that day he was given a second injection of sublamin of the same strength. April 13, the spinal fluid was positive, the globulin plus-minus, the cell count 12. May 5, 1915, the spinal fluid was positive, the globulin two-plus, the cell count 13. On that day he was given an intraspinal injection of mercuric chlorid, 0.0013 gm. On the 25th the spinal fluid was positive, the globulin plus-minus, the cell count 13. On that day he was given another intraspinal injection of mercuric chlorid, 0.0013 gm. September 17 the spinal fluid was positive, globulin plus-minus, the cell count 17. One week after the first injection the shooting pains in the legs cleared up to a marked degree, and only a slight occasional twinge of pain remained. The patient gained in weight and strength, but there was no improvement in the gait. September 17, there was absolutely no objective change in the patient's physical condition. He had occasional slight shooting pains in the legs, and no improvement of gait, but showed only subjective improvement.

CASE 4.—W. M., an Irish laborer, aged 51, whose chief complaint was shooting pains in the legs, and ataxia, admitted to moderate use of alcohol, but did not remember any specific infection. His family history was negative. His present trouble began in 1905, when he developed shooting pains in the legs, and ataxia. He came to the City Hospital in 1908, where he had been constantly treated with mercury and potassium iodid. He also had one dose of salvarsan in 1913. Since his treatment his pains and his ataxia have grown progressively worse. He has slight diplopia; otherwise his vision has not been affected. March 13, he had equal but contracted pupils, Argyll Robertson in character. There was no tremor of the tongue, but there was a slight coarse tremor of the face. He showed marked ataxia of both upper and lower extremities, with diminished elbow jerks, and absent knee jerks. His mental state was excellent. In January, 1911, his blood Wassermann was negative. Nov. 22, 1911, his spinal fluid was doubtful. Nov. 22, 1912, his blood Wassermann was still negative. Sept. 23, 1913, his first lumbar puncture was made; the spinal fluid was positive, the globulin was one-plus. There is no record of the cell count this time. July 4, 1914, his blood Wassermann was negative. The intraspinal treatment was started with this treatment, March 13, 1915. That day his spinal fluid was plus, globulin two-plus, cell count 29. He was given the intraspinal injection of sublamin of the usual strength, 0.0013 gm. This was followed by a reaction of violent headache, and increasing pains in the legs, which lasted for thirty-six hours. Two weeks later, March 24, his spinal fluid was positive, the globulin two-plus, the cell count 40. That day a second intraspinal injection was given, which was followed by a moderate reaction. April 13, 1915, the spinal fluid was positive, the globulin one-plus, the cell count 23. On that day a third intraspinal injection of sublamin was given. This third treatment almost entirely checked the pains, but made no change in the ataxia, or physical findings. September 20, the spinal fluid was still positive, the globulin plus-minus, the cell count dropped to 13. The patient had occasional slight pains in his legs with absolutely no objective change in his condition, save that he had gained in both appetite and weight. This patient then showed occasional subjective improvement over his previous condition.

CASE 5.—R. B., an American housewife, aged 50, whose chief complaint was vomiting and rectal tenesmus, was not alcoholic, and denied any specific infection. She had been addicted to morphin for the past fifteen years. Her present trouble began in 1904. She developed shooting pains in the legs and abdomen together with a girdle pain. Seven years later, she began to experience a difficulty in walking, and was treated for neuritis. In 1907, she took a treatment for the morphin habit which, however, was a failure. This time she was so weak and unsteady that she could not walk. In 1912, she developed Charcot joint in the right knee. March 1, 1914, the patient was practically bedridden, and complained of rectal tenesmus, and shooting pains in the legs. The pupils were dilated and equal, and Argyll Robertson in character. Her hearing was affected. She had a slight ataxia of the upper extremities with absent knee jerks. She was very much emaciated. She had been treated with only small doses of potassium iodid. March 15, the intraspinal treatment with mercuric chlorid was instituted. Three intraspinal injections of $\frac{1}{150}$ grain of mercuric chlorid each, and six intramuscular injections of 1 grain of mercuric salicylate, were given. This treatment covered a period of a little over two months, from March 6 to May 25, and produced the following changes in the serology:

The spinal fluid, from being positive, with globulin of one-plus, and a cell count of 80 on March 6, 1914, changed to a negative spinal fluid, with a globulin of plus-minus, and a cell count of 7, Sept. 10, 1915. In this patient each intraspinal injection caused a severe reaction of forty-eight hours' duration, with a marked increase in both the rectal pain and the shooting pains in the legs. The first injection decreased the severity of the pains very much. The second stopped them absolutely, for a period of two months; the slight recurrences noted were checked by similar intraspinal treatment.

Oct. 6, 1915, the patient changed to the following conditions: She was sitting comfortably about the ward. She had, occasionally, a few slight pains in the legs, largely attributed to her Charcot joint; she had gained a little in weight, and felt improved by her treatment, particularly as regards the rectal crises. Apart from her general condition there is no objective improvement to be noted. Her pupils are still fixed, her hearing is still unchanged, her knee jerks entirely lost, her mentality is excellent, and she has now very slight rectal disturbances. She has very marked subjective, but no objective improvement.

CASE 6.—L. C., a Chinese laundryman, aged 49, whose complaints were weakness, incontinence, headache, and pains in the legs, had an unreliable history, as he spoke a limited amount of English. At the time of admission, he was lying in bed, very markedly emaciated, confused, and very stupid. The pupils exhibited the Argyll Robertson phenomenon. There was a slight tremor of the tongue, and over the sacrum there was a large bed sore. The knee and Achilles jerks were both absent. There was marked incoordination of the lower extremities.

March 13, the intraspinal treatment was begun. On that day the patient was given sublamin. On the 27th another intraspinal injection of sublamin was given. April 16, the third injection was given, which consisted this time of one-fiftieth grain of mercuric chlorid. May 5, the fourth intraspinal injection, consisting of one-fiftieth grain of mercuric chlorid, was given. This treatment, then, covered a period from March 13 to May 5, and consisted of four intraspinal injections, two of sublamin and two of mercuric chlorid. They produced the following changes in the serology and condition of the patient: The spinal fluid from being doubtful with a one-plus globulin, and a cell count of 14, March 13, changed first to a negative spinal fluid, with a cell count of 21, and a globulin one-plus, and finally, May 5, to a positive spinal fluid with a one-plus globulin, and 6 cells. The patient's improvement was very marked. He got up, walked around the ward, gained 20 pounds in weight, his weakness disappeared, he regained the control over his sphincters, and the shooting pains in his legs and the headaches disappeared. In short, at the end of this treatment, he once more seemed like a normal Chinaman, and insisted on going home. He did what we would expect a normal Chinaman to do: he disappeared in the region of Mott Street.

CASE 7.—M. V., an Austrian housewife, aged 32, whose chief complaint was great nervousness, ataxia, shooting pains in the legs, and great difficulty in walking, on admission was weak, responded slowly to questions in a monotonous tone, and was disoriented as to time and place, with an impaired memory for recent events. The knee and Achilles jerks were both absent and she had a Romberg, a gait which was markedly ataxic, and some impairment of speech. The provisional diagnosis of the case was one of taboparesis. Her treatment was begun March 13, 1915, on which day she was given an intraspinal injection of sublamin. This was followed by a marked increase of shooting pains in the legs for twelve hours, and then of considerable improvement. She began to answer questions more readily and walk unassisted.

On the 27th she was given an intravenous dose of salvarsan. Following this she was much worse, vomiting, and becoming very weak and completely disoriented. A week later she was given another intraspinal injection of sublamin. May 3, she was given one-fiftieth grain of mercuric chlorid intraspinally, and on the 19th another one-fiftieth grain, intraspinally. Following this her mental condition became brighter, she was able to walk better, and there was considerable improvement in her general strength. She gained 15 pounds, and became a willing and useful worker around the ward. Her memory became much better.

The spinal fluid remained positive throughout. The blood Wassermann remained positive throughout. The globulin changed from two-plus to one-plus, and the cell count was lowered from 36 to 4. There was no change in the reflexes. The only point to be brought out in this case is that the intravenous injections of salvarsan, given in the course of the treatment, seem to be very damaging.

I fully realize the shortcomings of this paper. Forty-five cases are not a large enough number, nor is six months a sufficient period of time to allow of drawing definite conclusions. It is difficult to hold on to patients; it is especially difficult to hold on to syphilitic patients.

CONCLUSIONS

1. The reaction from mercuric chlorid or sublamin in no way differed from the reaction which followed the administration of salvarsan.

2. The sublamin did not seem to give the same reduction in the cell count or clinical improvement as did the mercuric chlorid.

3. No ill results followed these injections. The three deaths could be easily accounted for, as the patients were practically moribund at the time of the treatment, and were given the injections as a last resort.

4. The patients with tabes and cerebrospinal syphilis were helped more than any others.

5. Such improvement as did occur was evident in the feelings of the patient, in the sphincter control, in the pains, in the gait, and in the serology. There was no improvement in the reflexes.

6. Such intraspinal treatment can be given only at intervals of two weeks, because a cell count does not fall sooner.

7. The reaction obtained was one in which the cell count was first greatly increased, and then diminished.

8. The cell count and the globulin yielded much sooner than did the Wassermann.

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Responsibility of the State.—The health of the individual is an affair of the state, since his dependency, wilful or otherwise, becomes a burden on the state, directly or indirectly.—*Ohio Public Health Journal.*

SELECTIVE SENSORY REGENERATION IN AN ULNAR NERVE LESION *

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From the standpoint of pure physiology, the painstaking observations of von Frey and Goldscheider have demonstrated the independence of the nerve supply of the skin for special sensations. More recently, the exact experimental work of Head and Sherren has amply confirmed this point of view with abundant clinical evidence in peripheral nerve lesions and in cases of nerve regeneration. They have shown that the afferent fibers in the peripheral nerve may be divided into three systems; that is, the specific receptors for protopathic and epicritic sensation, and those which subserve deep sensibility. The nerve fibers and end organs of these systems are independent units and endow the skin with specific receptors for touch, pain, temperature, localization and deep sensibility. These systems can be distinguished by the nervous impulses set free through stimulation of the end organs in the skin.

Thus it has been agreed by physiologists and through clinical analysis, that the sensory functions of the skin are based on certain fundamental and independent qualities, and that these act as somatic receptors for the various tracts of the afferent nervous system. The skin as a tissue offers an ideal medium for the testing of such independent sensory qualities, since in it the fibers representing the peripheral prolongations of the spinal ganglion cells lose their myelin sheaths before entering the epithelium. These independent sensory receptors can best be demonstrated during the process of nerve regeneration, but that they are present and may also be elicited in the normal skin, is shown by an observation of Barker.[1] Here in an area of disturbed sensation on his own arm, it was found that the sensations for cold, warmth, pressure and touch were absent, while the sensation for pain was intact although there could be demonstrated a slight diminution in the number of pain points. This condition, in which only certain of the functions of the peripheral sensory nerves were abolished, was termed elective sensory paralysis. Similar modifications in elective sensory change were later demonstrated by Henry Head[2] in his auto-observations on nerve division. As a result of these experiments it was concluded that the skin was supplied by two anatomically distinct peripheral systems, which regenerated at different periods.

A somewhat analogous condition of selective sensory change was found in a case of complete severance of the ulnar nerve with a secondary suture. The case is reported because it offers admirable evidence of the independence of the sensory nerve endings of the skin as demonstrated during regeneration of the ulnar nerve. The patient was accidentally cut with glass on the left wrist, completely severing the ulnar nerve. After about two months the nerve was sutured. An examination six months later disclosed the following conditions: The ulnar side of the left hand is the seat of severe tingling and at times of pain. It is

* From the Neurological Department of the Boston City Hospital.
1. Barker, L. F.: A Case of Circumscribed, Unilateral and Elective Sensory Paralysis, Jour. Exper. Med., 1896, i, 348.
2. Rivers, W. H. R., and Head, Henry: A Human Experiment in Nerve Division, Brain, 1908, xxxi, 323.

decidedly hyperalgesic to various stimuli, such as rubbing, touching, etc. The little and ring fingers are glossy and mottled, but without any affection of the nails. All the muscles innervated by the ulnar nerve are weak and atrophied. There is wasting of the interossei, the adductor pollicis, the hypothenar group, the lumbricales and of the flexor digitorum profundus. The atrophied muscles show no reaction to the faradic current. The reaction to the galvanic current is slow and with polar inversion (AnCC > CaCC). The area of ulnar distribution is the seat of marked sensory disturbance which on more detailed examination revealed the following condition:

Epicritic Sensibility.—There is complete anesthesia to cotton wool over the palmar surface of the ulnar distribution. Over the dorsal surface, cotton wool produces slight tingling and pain. In this same dorsal area, a camel's hair brush also produces slight tingling and pain, while the palmar surface is completely anesthetic to a camel's hair brush. In tests for cutaneous localization by means of compass discrimination in the area of pure epicritic disturbance, the dull compass points 2 cm. apart are felt as one stimulus, whereas in a similar area of the unaffected hand they are felt as two points. In the anesthetic area, the pulling of hairs to a slight degree is painful.

In this area of complete anesthesia, particularly in the intermediate zone which lies outside the painful area later described, these results were obtained with varying lengths of von Frey's hair esthesiometer:

10 mm. length—very painful "like a needle."
20 mm. length—very painful.
30 mm. length—tingling without pain.
40 mm. length—faint sense of pressure without pain.

With the needle esthesiometer, pain points on slight pressure could also be demonstrated in this area. In contradistinction to the results obtained in the area of disturbed protopathic sensation, the pain points which could be elicited in this anesthetic (epicritic) area, were isolated and grouped in the middle of the palm and at the base of the ring finger. In no other portion of the pure epicritic zone could pain points be demonstrated, thus showing an incomplete regeneration of an independent sensory system.

Protopathic Sensibility.—Within the area of complete anesthesia to cotton wool and camel's hair brush, there can be demonstrated on the palmar and dorsal surfaces of the ulnar region, an area which is very sensitive to pain. This area is about 1 cm. less in extent than the area of disturbed epicritic sensibility, and includes the entire little finger. In this 1 cm. area, there is a pure epicritic disturbance with the isolated pain points already described on the intermediate zone. The sharp point of the needle esthesiometer in the area of disturbed protopathic sensibility, produces intense pain and occasionally a "cold feeling." Stimulation of certain points causes the painful sensation to irradiate over the entire ulnar distribution of the hand.[3] The sensation to a warm tube is diminished, but a cool tube is described as very cold, "like a piece of ice." With von Frey's hair esthesiometer, stimulation with hair lengths of 10 mm. and 20 mm. is very painful; at 30 mm. there is produced a sense of tingling, but no pain; at 40 mm. length, there is a faint sensation of pressure without tingling or pain. The results with this instrument were exactly the same as in the completely anesthetic area, except that the pain points were crowded closely together and could be demonstrated over the entire region. Deep sensibility was intact on pressure with dull points and to the extreme length of the hair esthesiometer. Here again there was an analogous condition to the anesthetic zone. It seems, therefore, that the pain was produced by the stimulation of the pain points, while the deep sensibility was preserved by the intact muscle spindles. In this area also, the compass test 2 cm. apart is painful even on light touch, and invariably produces a sensation of one painful point, probably due to a fusion of the two sensations through physiologic irradiation.

3. Déjerine, questionably it would seem, is inclined to interpret the occurrence of irradiations and painful points during the process of nerve repair rather on the basis of neuroma formation in the peripheral stump, than as evidence of selective sensory regeneration.

SUMMARY

To summarize briefly, during the process of nerve regeneration, isolated pain points could be demonstrated in a completely anesthetic area, while inside this area the pain points were so closely crowded together that they formed a zone of extreme hyperalgesia. Deep sensibility was intact. This condition proves that the specific receptors for pain were not only independent, but also were more capable of rapid regeneration than the specific receptors for touch.

This case is interesting because it demonstrates the independence of the nerve supply of the skin from special sensations. The specific receptors for touch (epicritic fibers) had completely disappeared and had not regenerated to the slightest extent, thus explaining the area of complete anesthesia. On the contrary, the receptor organs for pain (protopathic system) were the seat of very active regeneration. These end organs of pain could be demonstrated in groups in the area of complete anesthesia (the pure epicritic zone), thus proving that there is not only a difference of time in regeneration of nerve fibers, but these fibers regenerated separately because they were derived from independent afferent and receptor systems. Each system had a different regenerative power and was undergoing a different regenerative process, as shown by the fact that the fibers for touch discrimination regenerated much more slowly than the fibers for pain.

According to Head's[4] tables of the time necessary for regeneration, the recovery of epicritic sensation consumes a much longer period than the recovery of protopathic sensation. This is due to the fact that the protopathic fibers are more primitive and are therefore the first to regenerate, and, as our case shows, they regenerate as an independent system, even in the midst of the area where the epicritic fibers have completely disappeared and have not begun to regenerate. On the contrary, the epicritic fibers subserve a more refined discrimination, of a later evolutionary type and are therefore the last to regenerate, although, as our observation shows, the earlier regenerating protopathic fibers may be demonstrated in a zone in which the epicritic fibers have not regenerated to the slightest extent. The epicritic receptors are the first to disappear in a complete severance of a nerve and the last to regenerate.

In another case of suture of the radial nerve after a stab wound, the area for disturbed touch remained unchanged for months, whereas the area for disturbed pain sensations grew less and less. Finally, this latter area became a mere point in the center of the unchanged zone of epicritic sensation, showing the

4. Head, Henry, and Sherren, James: The Consequences of Injury to the Peripheral Nerves of Man, Brain, 1905, xxviii, 116.

independence of the sensory systems in regeneration, and also the independence of the specific peripheral receptors for both touch and pain. In this case, too, the motility returned and the electrical reactions became normal, proving that the regeneration of the motor fibers and of the protopathic system proceeded more rapidly than the finer discrimination of the epicritic system.

The preservation of deep sensibility in both the protopathic and pure epicritic zones is interesting. It is demonstrated by the fact that dull points and the hair esthesiometer at 40 mm. are able to produce a sense of pressure but are ineffective in producing pain, even over points where it was possible to evoke a painful stimulus with a shorter hair length. It seems from this observation that the threshold value for deep sensibility is more delicate than for pain points. Both are present, while in an identical area there is complete anesthesia for cotton wool. Sherrington has shown that the deep sensibility is appreciated by the terminal receptors called muscle spindles. These bodies are preserved even in atrophied muscles. That they are independent sensory receptors is shown by two facts—first, that when the motor nerve fibers had undergone complete degeneration, as shown by the atrophy and the complete reaction of degeneration, these sensory structures remained unaffected; and second, this deep sensibility was preserved in an area of complete anesthesia. The pulling of hairs stimulated the pain points in the pure epicritic zone, since the hair roots are intimately associated with the tactile organs of pain.

The conclusion to be drawn from these observations is the independence of the nerve supply of the skin from specific afferent receptors. The nerve endings for touch have disappeared and have not begun to regenerate, while the specific receptors for pain are in very active regeneration.

The exact type of the organs involved in the various sensory qualities is uncertain. Von Frey has attempted to classify these end-organs according to the type of specific response, but no general agreement has been reached on his observations. Theoretically, such an adjustment of different sensations on the skin with their differences of regeneration speaks strongly for the doctrine of specific energies of the nervous system.

The condition is best termed a selective sensory regeneration. In most cases of nerve suture the evidence for this type of regeneration is less marked than in the case studied, yet it occurs in all of them to a limited extent. While examinations of this sort consume considerable time, yet they are of clinical value in that they furnish more absolute evidence of the actual process of nerve regeneration than the usual coarser methods of testing sensation.

EXSTROPHY OF BLADDER

REPORT OF TWO CASES

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AND
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Exstrophy of the bladder occurs once in about 29,000 births. Five males to one female are so afflicted. That the male generative organs are more complex, that deficiencies in the anterior median line occur most frequently in the male, and that deficiencies in the posterior median line occur with more frequency in the female sex probably account for this difference.

The mortality during infancy is 60 per cent.

An exstrophied bladder may become carcinomatous. A few cases have been reported.

CAUSE

This congenital defect is best explained on a mechanical basis—an intra-uterine rupture of a completely formed bladder. The first stage in the process is the closing up of the urethra, causing retention of urine. The pubic bones, at this time scarcely cartilaginous, and still ununited, are kept apart until they become hardened. At the same time the rectus muscles are kept apart, so that little by little, by the intravesical pressure of urine, the bladder presses against the abdominal wall and finally ruptures and forms adhesions to the borders of the split.

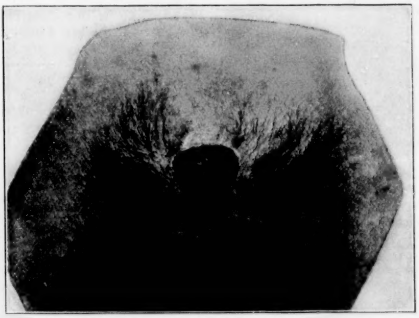

Fig. 1.—Exstrophy of bladder (Case 1). Below the umbilical scar the recti muscles are widely separated; a fibrous layer between them covers in the abdominal cavity. In the pubic region, separated from the normal skin by a white line, a rounded mass, 4.5 by 6 cm., is seen; its color varies from pale rose to dark red; the surface is irregular or wrinkled; granular in patches. The parts are covered with slime, and constantly wet with odorous urine. The ureters are seen opening on the surface of this mass between mucous folds. The orifices discharge jets of urine at intervals. Symphysis pubis is absent; a fibrous band, 1.25 by 6 cm., connects the pubic bones. There is complete epispadias; a shallow groove indicates the floor of the urethra; the roof is wanting. Testicles, scrotum and anus are normal. There is no hernia. The prostate gland is palpable.

THE MAYDL OPERATION

Since Maydl (1892) first successfully transplanted the vesical trigon in the sigmoid colon in a case of exstrophy of the bladder, this method—in some instances modified—was followed in 152 cases collected from the literature and the two cases now reported. Of the total number, 129 were males (5 of adult age); 25 were females (7 of adult age). Forty-four died—a mortality of 28.5 per cent. Deaths were attributed to: pyelonephritis, 21; general peritonitis, 8; chloroform narcosis, 1; pneumonia, 3; hemorrhage, 1; pulmonary embolism, 2; other causes, 8.

The functional results were good.

The longest period of observation of patients was seven years.

The originator of the technic reported ten cases—an unusually large number. Twelve cases were contributed by seven American surgeons.

CASE REPORTS

CASE 1.—H. L., man, aged 20 years, whose family history was negative, had had no illness since childhood, and always

lived on a farm, doing the usual work. The disagreeable odor caused by decomposing urine prevented his attending school. He could neither read nor write. The extreme sensitiveness of the exposed bladder mucosa did not tolerate the wearing of trousers, and a dark colored loose fitting skirt reaching to just above the ankles was worn instead. His gait was waddling. A catheterized specimen of urine contained nothing pathologic.

Surgical treatment of this patient during his earlier years, several times proposed to the parents, was rejected for various reasons. A suicidal tendency of late prompted the desire to seek relief now.

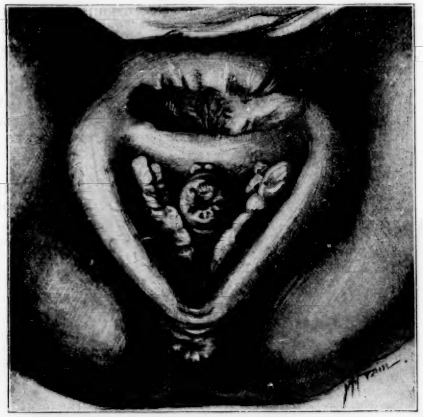

Fig. 2.—Exstrophy of bladder (Case 2). Diastasis of rectus muscles. Above the vagina is seen the exstrophied bladder, 4 by 6 cm., with ureteral openings, discharging urine intermittently; this trickles in sufficient quantity to keep the parts below always wet; no symphisis pubis; the pubic bones are joined by a fibrous band; cleavage of clitoris and labia minora; hypertrophy of the latter. The labia majora are sparsely covered with hair. The cervix (eroded, enlarged and lacerated) protrudes beyond vulvar edge. The result of injury to pelvic floor is apparent. No palpable disease of adnexa.

A modified Maydl operation was performed in two stages. The abdomen was opened through the left rectus muscle; the sigmoid was delivered; the bowel was divided; both ends were closed, and a lateral anastomosis was made with needle and thread between the proximal and distal segments at the lowest point possible. The plan was to use the pouch above the anastomotic opening—in the distal segment placed mediad—as a receptacle for urine. Recovery was uneventful.

Ten days later, catheters were placed in the ureters. An incision was made following the line between the skin and bladder mucosa; a catgut ligature was applied 2 cm. distal to the interureteric line; the mucosa and muscularis proximal to this was divided, and the tissue grasped with forceps; the bladder flap was dissected sufficiently loose to transplant without tension; there was considerable venous bleeding, which was controlled by hot sponges and a few ligatures; the vesical flap containing the trigon was trimmed to the proper size and wrapped in gauze. The peritoneal cavity was opened in the midline; the sigmoid colon was brought up; a curved intestinal clamp was applied to the pouch; the trigonal flap (requiring a quarter turn) was apposed to the bowel; the intestine was opened longitudinally 3.5 cm.; transplantation was made with a loop-on-mucosa suture, followed by Lembert stitches. The cavity resulting from the dissection of the bladder flap was packed loosely with plain gauze. The laparotomy wound—endeavoring to correct diastasis of muscles—was closed.

The patient returned to bed in fair condition; on the second day he was much better. He voided urine by rectum every four hours. He did not vomit or complain of renal tenderness. In short, the postoperative course was satisfactory until the seventh day, when a sudden change was noticed.

He complained of precordial pain, his facial expression was anxious, breathing difficult, pulse rapid and weak, temperature elevated. His condition became steadily worse, and he died within a few hours.

A limited postmortem revealed a circumscribed peritonitis in the region of transplantation; there was no leak; the trigonal flap and the bowel wall were of good color; the ureters were normal; the kidneys were somewhat congested; there was no pus. Venous thrombosis was apparent in the region examined.

Considering the trauma to the large veins encountered in the dissection of the exstrophied bladder, and the clinical course, pulmonary embolism was probably the immediate cause of death.

Case 2 is unique — the first instance, according to the literature, in which the patient was a mother.

CASE 2.—Mrs. R., aged 26 years, was the only member of her family to have a congenital deformity. The greater part of her life was spent in rural districts. She never attended school, and was unable to read or write. Prior to her marriage she worked as a domestic. To obtain employment was difficult, and her stay in one place was usually brief. She had borne two children; one was living, aged 4 years; the other died when 4 months old. While her condition was pitiable before she became a mother, childbearing, followed by prolapse of uterus and vagina, added much to her woe.

At the first operation the cervix was amputated and the pelvic floor repaired. Recovery was satisfactory.

At the second operation (three weeks later) catheters were inserted in the ureters. The exstrophied bladder was dissected subperitoneally to the requisite extent, and wrapped in gauze. The peritoneal cavity was opened. The uterus was amputated at the corporocervical junction. The ovaries and tubes were preserved. The ligaments were used in the best possible manner to anchor the stump. The sigmoid colon was delivered and an intestinal clamp applied. The bowel was incised in the long axis 3.5 cm. The bladder was brought in apposition with the colon; no tension. Anastomosis and closure of wound were similar to that previously described. The anal sphincter was dilated and a rectal tube inserted.

Fig. 3.—Ascending infection in a dog, terminating fatally in ten days. The left ureter is dilated, and the left kidney contains pus. No apparent change on the right side.

Following this operation there was a moderate degree of shock, from which the patient soon recovered. She voided urine by rectum every three or four hours. On the eighth

day she vomited several times. Gastric lavage was performed. The patient left the hospital in five weeks, pleased with her condition. Urine was now retained four hours during the day, and caused little discomfort at night.

Subsequent observation, during the past ten months, indicates a good functional result.

ANIMAL EXPERIMENTATION

During the past three years, in a number of dogs, after removing the major portion of the urinary bladder, we have transplanted the vesical trigon in the colon. Our early attempts were occasionally followed by fatal peritonitis or pyelonephritis. Latterly, the results have been quite satisfactory. An animal operated on twenty-six months previously manifested no sign of illness until the onset of a purulent infection of the right conjunctiva, extending to the meninges, resulted in death eight days later. Postmortem revealed practically no change in kidneys or ureters.

CONCLUSION

The result desired in the surgical treatment of exstrophy of the bladder — a reservoir for urine under control — is best attained by the method of Maydl or a modification of this procedure.

Development of the technic on the lower animals is essential to success.

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PLASTIC OPERATIONS FOR ACQUIRED DEFORMITIES OF THE FACE *

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Plastic operations on the face are usually not life-saving procedures; but the curing of a facial deformity not only relieves the physical discomfort of the patient and assuages his mental anguish, but gives relief to the inhabitants of the community in which the patient lives. The necessity for seeing daily some one with a hole in the frontal sinus, a retracted lip, or a deformed nose, is by no means an agreeable prospect. So if a philanthropist be one who makes two blades of grass grow where one formerly grew, plastic surgery of the face may be considered a philanthropic field. Surely it is of more importance to the community than the placing of monuments or the beautifying of streets.

Surgery of the neck and plastic surgery of the face probably demand more skill than any other kind of surgery. It is essential for one who operates on the neck to be a good operator and to know anatomy well. Plastic work on the face demands some knowledge of anatomy and physiology, but particularly requires a kind of ingenuity to meet unusual conditions and to make things fit, which is not essential in most major surgical operations.

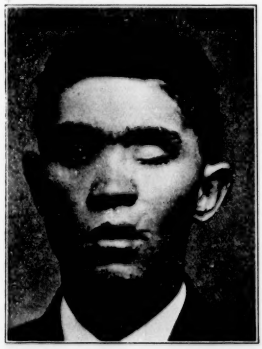

Fig. 3.—Closure of left eye due partly to displacement of fractured bone to which inner canthus of the left eye is attached, and partly to injury to the levator palpebrae.

General considerations, such as the age and health of the patient, must be given due weight. The age of the patient is of great importance, as flaps can be successfully transplanted with a smaller amount of nourishment in the young than in the old. In the matter of dressing, dusting the wound with boric acid powder and leaving it open is all that is necessary. If there is much oozing, a compress of dry gauze may be kept on for a few hours. When any of the cavities of the face are involved in the wound, hexamethylenamin is administered before and after operation, as it tends to sterilize the secretions of the mouth and nose.

While general principles can guide in plastic work on the face, each case is truly a law unto itself. Though the same principles may be followed in a certain group of cases, no two of them will be done exactly alike. For this reason a report on plastic surgery of the face, and particularly for acquired deformities, should deal largely with reports and illustrations of individual cases.

Dividing the face into regions and taking them from above downward, we first have the deformities of the forehead. I have had three cases which illustrate a very striking deformity following the loss of a portion of the anterior bony wall of the frontal sinus, all of them resulting from trauma. In such instances it is necessary to find if the infundibulum, or communication between the frontal sinus and nose, is well open. If so, the skin can be readily turned in with the epithelial side down, and the small amount of discharge together with the exfoliated epithelium can go through this communication to the nose. If it is not sufficiently large, a curved probe is passed through the frontal sinus, the infundibulum, and out of the nose and by means of a string tied on the end of the probe a gauze strip is drawn through the infundibulum. The gauze, when sawed back and forth, will increase the size of the opening to the desired caliber. As the bone in this region is quite fragile, this procedure is better than any attempt to use metal instruments. If the defect in the wall of the frontal sinus is large, two small skin flaps are outlined around the depressed margin with the base of the flaps at the margin of the opening. Each external to the incision is undermined and the pericranium cut down to the bone at some distance from the incision into the skin. The flaps are then elevated and turned into the opening with the epithelial surface inside, the pericranium being overlapped like a double-breasted coat. This will fill even a large defect. The skin to cover the raw surface is brought from the adjacent portions of the forehead, depending on the manner in which the scar tissue runs and on the tension (Figs. 1 and 2). A vertical flap with the base over one eyebrow may be used, making the lines of incision when the flap is in position about parallel with the normal creases in the forehead. In one instance in which the defect was not very large, I made a long transverse incision, mobilizing the skin

* Read before the Southern Surgical and Gynecological Association, Cincinnati, Dec. 13, 1915.

* On account of lack of space, this article is abbreviated in THE JOURNAL by omission of some of the illustrations. The complete article appears in the author's reprints. A copy of the latter will be sent by the author on request.

of the forehead, and covered the flaps that had been inverted by sliding the whole forehead down. If the defect is large, however, or particularly if it extends more vertically than transversely, this cannot be done.

Deformities about the eyelid often fall into the hands of the eye specialist. A rather interesting case,

Fig. 4.—Drawing of patient shown in Figure 3. Note that the left inner canthus is lower than the right. The skin incision is shown.

however, came under my care in which the patient was severely injured by an explosion in a mine. The bones of the nose and upper part of the face were comminuted, and after healing had taken place it was found that there was a sagging down of the left eyelid, so that it was impossible for the patient to see with the left eye. An examination showed that the muscles of the eyeball were normal, but the inner canthus was considerably lower than the corresponding inner canthus of the right eye. The problem, then, was to raise the inner canthus of the left eye, and if this did not relieve entirely to shorten the upper lid. An incision was made along the bridge of the nose and through the left eyebrow. A piece of bone including the ascending portion of the superior maxilla, to

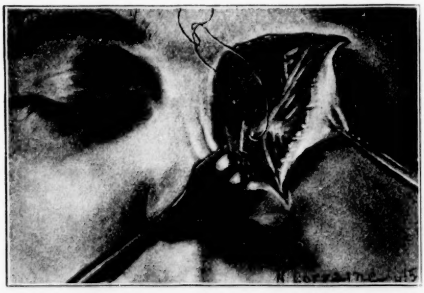

Fig. 5.—The misplaced bone has been loosened, holes have been drilled, and kangaroo tendon to hold fragment in position is about to be tied.

which the inner canthus is attached, and a small portion of the lacrimal bone was found separated and displaced downward. It was loosened from its new position and replaced at its normal level. A hole was drilled in the nasal bone and in the fragment, and the fractured bone was fastened in position with kangaroo tendon. Healing was good, except that there was some discharge of pus opposite the kangaroo tendon. The scar was very satisfactory. This improved the condition, but still the lid could not be elevated enough; so under novocain, a transverse section of the upper lid, including skin and tarsal cartilage, was removed. The wound healed nicely and the patient now has use of the eye (Figs. 3, 4, 5 and 6).

There are occasional instances in which injury is so extensive and so many portions of the face are involved that the case cannot be classified regionally. In one such case the skin for the eyelids was made by freeing the tarsal cartilage, suturing the lids together, and then transplanting a flap from the forearm, leaving it with a pedicle attached for about ten days. After this time, the pedicle was severed and in a few days the flap was split, making both an upper and a lower lid. If necessary, the method of transplanting a flap from the abdomen to the hand and then from the hand to the face can be used. In this case a number of operations were performed, the lips being made by a large flap from the upper arm which was split so as to form part of the upper lip as well as all of the external portion of the lower lip.

Fig. 6.—Result after both operations. Note the scar in the lid, where part of the lid was resected to take up the slack in the attachment of the levator palpebrae.

Defects of the cheek are sometimes difficult to close. When it is impossible to slide flaps from the margins of the opening without too much tension, a flap can be taken from the forehead by dissecting the attached anterior temporal artery and transplanting it beneath the skin. A lower eyelid was made by Monks[1] of Boston by undermining the skin between the region of the eyelid and the origin of the anterior temporal artery, dissecting a flap from the forehead with the anterior temporal artery attached, and carrying the flap and its artery under the undermined skin to its new position. For large defects, the method of transplanting the anterior temporal artery with a frontal flap seems peculiarly desirable. The artery should be dissected with considerable tissue around it and transplanted to its new bed by means of an incision that merely goes through the skin and not deep enough to sever the branches of the facial nerve. The skin, of course, should be undermined on each side so as to cover the artery without tension. The flap should be stabbed in several places to facilitate the oozing of

1. Monks: Boston Med. and Surg. Jour., Oct. 20, 1898.

blood. The chief objection to this operation is that there is too much nutrition, and until a venous supply forms which will carry off the excess of arterial blood, there is danger of the artery pumping the flap so tight that thrombosis and gangrene will occur (Figs. 7 and 8). If the defect involves the mucous membrane of the mouth, the inner raw surface can be lined with mucous membrane from the tongue, as suggested by Willard Bartlett, or a flap may be turned up from the neck with the epithelial surface inside.

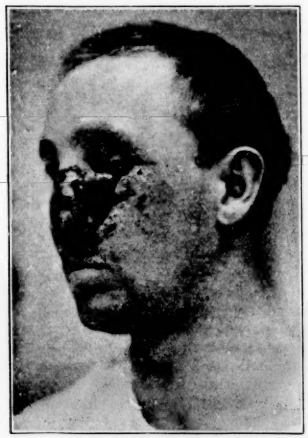

Fig. 7.—Defect in cheek resulting from wound with shotgun. The opening is into the nasal cavity.

Fig. 8.—Appearance of patient shown in Figure 7 about two weeks after operation in which a frontal flap was transplanted with anterior temporal artery. Note the scars where the anterior temporal was dissected and transplanted.

Fig. 10.—Young girl with deformity of lower lip from burn. Note the eversion of mucous membrane. Photograph was taken just before operation while the patient was under ether with rubber cap on her hair.

Deformities of the nose are conspicuous and sometimes difficult to deal with on account of the inability to give the shape that cartilage would. In one instance in which the nose completely collapsed because of traumatic destruction of the septum, I transplanted a piece of rib. The rib was split and the half covered with periosteum was molded and inserted between the mucous membrane and the skin of the nose like a rafter, each end of which rested on a superior maxillary bone. In a patient with a defect of the nose following a paste applied by some advertising cancer doctor, the ala was thoroughly freed and a flap was taken from the septum including mucous membrane and some cartilage.

In order to lower the point of the nose, a section of cartilage was removed from the septum. The flap was left attached to the septum near the tip of the nose, and was then brought up into the defect. Thiersch skin grafts were applied to the raw surface. They did not take except in one small place, but the healing was satisfactory. After about two weeks the base of the flap was cut and pushed up on a level with the rest of the nose. The nutrition of the flap was poor at its base (after being cut) and there was probably too much pressure from the gauze which was inserted within the nose to hold up the base of the flap.

There is still a small opening at this point, which I think can be closed. The septum is necessarily crooked,

Fig. 11.—Same patient as shown in Figure 10 just before cutting the pedicle of the flap used to reconstruct the lower lip.

but the general appearance of the nose when viewed either from the full face or from the side is fairly satisfactory.

I have had one patient, a Greek, with a very peculiar deformity of the lower jaw. It was probably congenital in origin, though it increased greatly with his growth. It was remedied by removal of the redundant bone down to the inferior dental canal, through an incision about an inch below the jaw.

Deformities of the lip resulting from operations for cancer may be corrected in a number of ways, following the rules laid down in the textbooks. I have found, however, that a long V-shaped excision with the apex rather narrow, and loosening of the tissue on each side, is a simple and effective measure. If too much constriction occurs, the corners of the mouth can be split and the mucous membrane sutured to the skin. Fortunately, cancer of the lip occurs in middle-aged or elderly persons, in whom the skin is greatly relaxed and the lower lip usually sags down; consequently, the appearance of the lip is often improved by such an operation. In younger persons, in whom burns often produce deformity, the skin can be slid up from the neck, if the burn is not too extensive, or can be transplanted from the arm, leaving a pedicle for about two weeks. All of these cases will require slight operations later on to smooth down the region where the pedicle was cut. Thiersch grafts will promote healing but do not prevent the contraction following burns; therefore the whole skin should be used.

Fig. 12.—Ultimate result after smoothing out the flap.

Owing to the relaxed condition of the tissues in the old, a burn will often produce a different type of deformity here from that which is found in the young, in whom the tissues are firmer and more closely connected and tend to move as a whole (Fig. 9).

In the case of a young girl in which it was necessary to make practically the whole lip except the mucosa, a very satisfactory result was obtained by reconstructing the lip from a flap transferred from the arm (Figs. 10, 11 and 12). If only the lower part of the lip is involved, flaps can be slid up from the chest, or from the neck, sometimes cutting them twice in order to get them into position, "waltzing" them, as it is termed by Halstead (Figs. 13 and 14).

A complete defect such as is left by noma, involving skin, muscle and mucous membrane, can usually be corrected by a quadrangular flap which is turned down from the cheek, the mucous membrane being included.

In a case in which there was a defect of this kind the base of the flap was external to the outer angle of the mouth and the lateral incisions ran parallel to the nasolabial fold. The flap was turned into the defect, which consisted of complete destruction of almost half of the lower lip and part of the cheek, and the vermilion border of the lip was constructed at subsequent operations.

Fig. 13.—Boy with deformity resulting from burn on the lower lip, neck and chest.

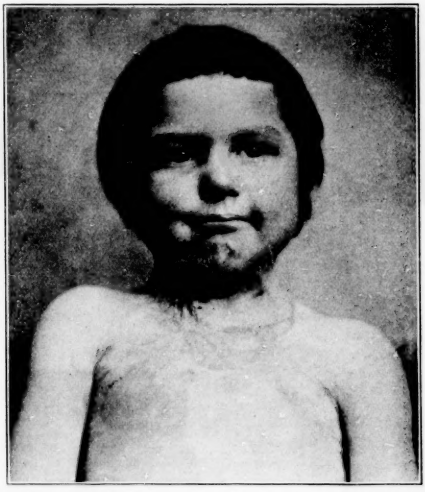

Fig. 14.—Boy shown in Figure 13 after operations in which flaps were brought from the neck and shoulder on both sides. Note that the patient can now close his lips firmly without any undue tension on the tissues of the neck.

CLINICAL DETERMINATION OF RENAL FUNCTION BY AN INDEX OF UREA EXCRETION *

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During the past few years, qualitative and quantitative studies of renal excretory activity, or so-called kidney function, have been carried out in a number of ways. These studies have been directed, on the one hand, either toward an estimation of elimination in the urine by the kidney of substances which it excretes normally, or toward the study of the ability of the kidney to excrete foreign substances artificially introduced into the body. On the other hand, there have been numerous studies of the blood in the various forms of disturbed renal function.

For the study of excretion of foreign substances, various dyes have been used. Most important of these is phenolsulphonephthalein, introduced into clinical use by Rowntree and Geraghty.[1] The method consists in the intravenous or intramuscular administration of the dye, and the colorimetric determination of the amount recovered in the urine in a standard length of time. Its value depends on the fact that normally a fairly constant percentage of the dye injected is excreted in the urine within the first two hours, and that in certain types of disturbed renal function the excretion is delayed, so that a smaller percentage appears in the urine during the period of observation. The method has proved to be of great service in the study of renal activity.

Schlayer and Takayasu[2] have used lactose and potassium iodid in a large number of cases, the lactose to test the ability of the kidney to excrete substances in the same general class with urea, and the iodid to test salt function. In general, these tests have not been found so easy of application or of interpretation as to make them of great value.

Study of the elimination of substances normally excreted by the kidney has mainly included determinations of the nitrogen and salt in the urine following the ingestion of an analyzed diet. Applications of this method have been advised by Hedinger and Schlayer,[3] and more recently, in this country, by Mosenthal.[4]

In all these tests it has been the urine alone which has been examined, the assumption being made that alterations in the manner or time of elimination are due to kidney factors alone. But this assumption is open to serious objection. The time required for the excretion of considerable amounts of nitrogen or salt, suddenly added to the diet, may, indeed, give some indication of the degree of kidney insufficiency; but the failure to excrete these substances within a specified time is often due to other factors than the ability of the kidneys to carry on their excretory functions. Thus a patient with fever may retain enormous quantities of salt in the body, even though the kidneys are perfectly capable of excreting it, and retention is due to the fact that the excess salt is removed from the blood by the tissues. That, under certain other conditions, a similar retention of nitrogen in the tissues occurs, independently of the ability of the kidneys to excrete nitrogenous substances, is indicated by the recent studies of Foster and Davis.[5]

Study of the daily nitrogen or salt balance between intake and output is of even less value than study of suddenly added nitrogen or salt. It has, indeed, long been recognized that determination of the total nitrogen or urea output gives no indication as to the state of the function which provides for the excretion of nitrogen. An individual may excrete normal amounts of urea in the twenty-four hours, and remain in perfect nitrogen equilibrium for weeks or months, and yet be suffering from severe nephritis, with advanced functional changes. Except in the case of those patients with chronic parenchymatous nephritis, who are scarcely able to excrete any salt at all, comparison of the salt output with the intake gives little information. In fact, the salt balance is so easily disturbed by extrarenal factors that the findings are more apt to be misleading than of direct value, as far as the chlorid function of the kidney itself is concerned. The same objection seems to hold with regard to the use of potassium iodid as a test of the ability of the kidney to excrete salts, since potassium iodid is influenced by the same extrarenal factors which influence sodium chlorid.

Studies such as these, of urine alone, can at best give only a general idea of the true renal condition, and can be in no sense a quantitative measurement of the renal activity.

In addition to the urine, the blood has also been studied in these conditions, especially as to its urea and total nonprotein nitrogen content. The results of these estimations have been more encouraging. Studies of the nonprotein nitrogen of the blood have been stimulated by the recent improvements in methods for blood analysis introduced by Folin, Marshall, Van Slyke and Cullen, Benedict and others. Attention has been directed not only toward the urea and total nonprotein nitrogen, but also to the study of uric acid, creatin and creatinin, and amino-acids, as they exist in the blood. It has been found that the various forms of nonprotein nitrogen, but more especially urea nitrogen, are increased in the blood in certain forms of nephritis, and one may often recognize impairment of function by examination of the blood alone, the amount of increase in urea or total nonprotein nitrogen affording some clue as to the severity of the condition.

Determination of the amount of urea nitrogen, or of total nonprotein nitrogen in the blood, however, is not entirely dependable as a measure of excretory activity. The normal concentration of urea in the blood is not fixed, but varies within wide limits in response to variations in nitrogen and fluid intake. As a matter of fact, the larger proportion of individuals with disturbed urea function have concentrations of urea in their blood which are below the upper limits in normal individuals, so that the line of demarcation between normal and abnormal subjects is not sharp. Blood urea figures alone, therefore, may call attention only to the more serious instances of disturbed function. Furthermore, the concentration of urea in the blood even of nephritic individuals is not constant or fixed.

* From the Hospital of the Rockefeller Institute for Medical Research.

1. Rowntree, L. G., and Geraghty, J. T.: The Phthalein Test, Arch. Int. Med., March, 1912, p. 284.
2. Schlayer and Takayasu: Untersuchungen über die Funktion kranker Nieren beim Menschen, Deutsch. Arch. f. klin. Med., 1910-1911, ci, 333.
3. Hedinger and Schlayer: Ueber die Prüfung der Nierentätigkeit durch Probemahlzeit, Deutsch. Arch. f. klin. Med., 1914, cxiv, 120.
4. Mosenthal, H. O.: Renal Function as Measured by the Elimination of Fluids, Salt and Nitrogen, and the Specific Gravity of the Urine, Arch. Int. Med., November, 1915, p. 733.
5. Foster and Davis: Proc. Soc. Exper. Biol. and Med., November, 1915, xiii, 33.

On the contrary, Widal and Javal,[6] in 1904, showed that the concentration of urea in the blood can be made to fluctuate at will in cases of nephritis, by varying the protein intake. They formulated standards for judging the degree of variation from normal in the concentration of urea in the blood, according to the nitrogen intake of the individual. The demonstration of variations in the concentration of urea and total nonprotein nitrogen in the blood of nephritics, under various conditions of nitrogen intake, has been more recently considered by Folin and his collaborators,[7] and by Frothingham and Smillie.[8]

The limits of variation of the concentration of urea in the blood, and the circumstances which govern these variations were therefore known when Ambard,[9] another French observer, following Widal and Javal, carried investigations in this field a step further. His method includes a knowledge not only of urea concentration in the blood, but in the urine as well. To this he added determinations of the rapidity with which urea elimination occurs. All of these factors, which are interdependent, are included in his estimations. He demonstrated that normally a constant relationship exists between the concentration of urea in the blood and the amount excreted per unit of time (that is to say, the rate of its excretion). He formulated the laws governing this relationship, and expressed them in a form known as Ambard's coefficient.[10] This coefficient gives the *ratio between the concentration in the blood and the rate of excretion.* Applied to normal individuals, remarkably constant values are obtained for the coefficient. But in cases with impaired function, Ambard showed that the coefficient obtained is often very greatly changed, because there is a relative increase in the concentration of urea in the blood and a relative decrease in the rate of excretion. Ambard's findings in normal and pathologic individuals have been repeatedly confirmed, and need no further support. The principles underlying the laws are discussed briefly here.[11]

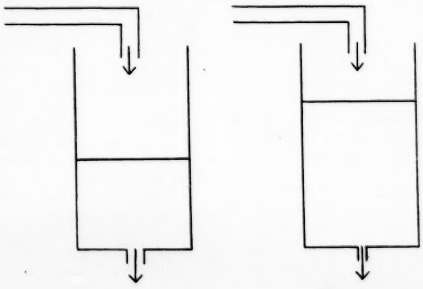

Fig. 1.—Diagram to illustrate the principles of the laws governing the rate of urea excretion. The rate of outflow of fluid from *A* and *B* is governed by the level of fluid in the vessel and the size of the outlet. The rate of excretion of urea is similarly governed by the concentration of urea in the blood and the functional capacity of the kidneys.

AMBARD'S LAWS

The principles underlying the laws of urea excretion may be illustrated in a very simple way. If we imagine a vessel (*A*, Fig. 1) into which water flows at a constant rate, escaping through an outlet at the bottom, the water will seek that level in the vessel at which the pressure is such that the rate of outflow is exactly equal to the intake. If we then decrease the size of the outlet, the rate of inflow remaining as before, the water in the vessel will rise to a new level, at which the rate of outflow is again exactly equal to the intake (*B*, Fig. 1). A change in the rate of inflow will of course cause a change in the level. In other words, fluctuations in the level of the water in the vessel may occur to compensate for changes in the rate of inflow or in the size of the outlet. As is well known, these changes are not haphazard, but take place according to definite laws of hydrostatics, and may be expressed numerically. Similarly, fluctuations in the concentration of urea in the blood occur in health to compensate for changes in the nitrogen intake, and in pathologic conditions to compensate either for changes in the nitrogen intake or in the rapidity with which body proteins are broken down, or in the size of the outlet, represented by the relative functional efficiency of the kidney. Either increased urea formation in the body, or disturbance of urea elimination through the kidney, requires a higher level of urea in the blood to provide for a sufficiently rapid rate of excretion to keep the organism in nitrogen equilibrium. That this is the mechanism of fluctuations in concentration of urea in the blood in health and disease was known from the work of Widal and Javal.[6] That these changes take place in response to definite laws, capable of numerical expression, was shown by Ambard.

So far we have spoken only of the concentration of urea in the blood, but it is obvious that other factors play a part in determining the rate of excretion. Changes in the rate of water excretion alter the rate of output of urea, which changes as the concentration of urea in the urine changes, though not directly in proportion to these changes. The rate of elimination also varies according to the weight of the individual, and is constant per kilogram of body weight, when the other conditions remain constant. All of these factors have been considered by Ambard in formulating the laws published by him.

Certain variations in these factors occur among normal individuals, and in the same individual. We have previously[12] called attention to this fact, and have suggested that these variations are due in part to changes in blood flow through the kidneys, and to variability in

6. Widal and Javal: Le mécanisme régulateur de la rétention de l'urée dans le mal de Bright; l'indice de la rétention uréique chez les brightiques, Compt. rend. Soc. de biol., Oct. 22, 1904, 301, 304; Semaine méd., 1904, xxiv, 347; La rétention de l'urée dans le mal de Bright, comparée à la rétention des chlorures, Semaine méd., 1905, xxv, 313.

7. Folin, Otto; Denis, W., and Seymour, Malcolm: The Non-Protein Nitrogenous Constituents of the Blood in Chronic Vascular Nephritis (Arteriosclerosis) as Influenced by the Level of Protein Metabolism, Arch. Int. Med., February, 1914, p. 224.

8. Frothingham, Channing, Jr., and Smillie, W. G.: A Study of Different Nitrogenous Diets in Chronic Nephritis, Arch. Int. Med., February, 1915, p. 204.

9. Ambard, L.: Rapports entre le taux de l'urée dans le sang et l'élimination de l'urée dans l'urine, Compt. rend. Soc. de Biol., Nov. 19, 1910, p. 411; Rapports de la quantité et du taux de l'urée dans l'urine, la concentration de l'urée du sang étant constant, ibid., Dec. 3, 1910, p. 506; Physiologie normale et pathologique des reins, Paris, 1914 (for bibliography and review of French work on subject).

10. See also, Ambard's Formula, Queries and Minor Notes, THE JOURNAL A. M. A., Sept. 7, 1912, p. 818.

11. Ambard's laws, and the derivation of the index of urea excretion, have been fully discussed in our previous papers, to which the reader is referred for more complete information. It has been possible here to give only the formula as used at present, with a brief statement of its significance, and the methods for observation and for calculation.

12. McLean and Selling: Urea and Total Non-Protein Nitrogen in Normal Human Blood; Relation of Their Concentration to Rate of Elimination, Jour. Biol. Chem., 1914, xix, 31. McLean, F. C.: The Numerical Laws Governing the Rate of Excretion of Urea and Chlorides in Man, Jour. Exper. Med., 1915, xxii, 212, 366.

the amount of functionating kidney tissue in relation to body weight in different individuals. Up to the present time it has not been possible to estimate these variables. In comparison with the changes found in abnormal individuals, this variability is, relatively speaking, slight. It is of physiologic interest, but does not affect the applicability of the laws as at present used.

We take up the subject where Ambard left it. It is the purpose of this paper to present a relatively simple method, based on the laws of Ambard, for making clinical estimations of the state of the function which has to do with excretion of urea. It is important to state that investigations concerning urea excretion are especially valuable in the study of renal disease. For although the various functions of excretion by the kidney appear to be quite specific, so that no one test can be regarded as a measure of total renal function, nevertheless the information obtained from a study of the urea function appears to be more general than from that of any other. In consequence it may, in a measure, be regarded as throwing light on the renal capacity or activity as a whole.

Data obtained by this method are direct quantitative measurements of one of the most important functions of the kidney, that is, the elimination of nitrogen in the form of urea. Interpretation of the results, therefore, depends not on general impressions, but on definite facts, as far as this function is concerned. Performance of the test requires a shorter time than the use of any test diet, requires fewer analyses, is much more broadly applicable, and may be repeated indefinitely without harm or inconvenience to the patient. It requires no knowledge of the nitrogen or fluid intake, and is not interfered with by vomiting, refusal of food, diarrhea, delirium or coma. The blood and urine required for the necessary analyses may be secured within the time of an ordinary consultation, and the analyses can be carried out in any well equipped clinical laboratory. From the standpoint, therefore, not only of ease and convenience of performance, but also of the value of the results obtained, the method is to be preferred to the various modifications of the test diet.

THE INDEX OF UREA EXCRETION

The index of urea excretion is based on an ideal normal Ambard's coefficient of 0.080. The extremes of variation of Ambard's coefficient in the normal are from about 0.050 to 0.085 or 0.090. Deficiency in urea function results in higher values. These higher values are due to a change in the ratio which exists between the concentration of urea in the blood and the rate of its excretion. Such findings indicate deviation from the normal, but do not measure the extent of the functional change which is responsible for such deviation. The significance of the abnormal ratio found in any pathologic case, therefore, can be understood only by reference to an arbitrary scale, determined by experience.

Since it is possible to utilize the laws of Ambard in another form to measure functional changes directly, we have thought it desirable to use a new formula. In the case of the formula as at present used, the ideal normal is determined arbitrarily, by experience, and deviations from the normal in the rate of urea excretion are measured directly in terms of the ideal normal. Ambard has shown experimentally that the rate of excretion of urea under otherwise constant conditions varies directly with the amount of functionating kidney tissue. In observations in human subjects it is not possible to keep conditions constant, but it is possible, by an application of Ambard's laws, to measure the influence of their variations on the rate of excretion of urea. The ideal normal rate of excretion, under the conditions found, at any time, is given a value of 100. The index then expresses, in direct percentage, the rate of excretion found, in terms of the rate of excretion that a normal individual would develop under the same conditions as to concentration in the blood, concentration in the urine, and body weight.

The index is therefore not a substitution of a new formula, with a new scale of arbitrary values, in place of the Ambard formula, but is a direct measure of an important excretory function. Since, as we have shown, Ambard's coefficient is not in itself a direct indication of the state of the function which has to do with the excretion of urea, but is merely the ratio between the concentration of urea in the blood and the rate of its excretion, the index expresses facts which can be obtained from Ambard's coefficient only by further calculation.

Ambard's laws depend on the constant relationship of four variables: (1) the concentration of urea in the blood; (2) the concentration of urea in the urine; (3) the rate of urinary excretion, which together with (2) gives us the rate of urea excretion, and (4) the weight of the individual. We have indicated this constant relationship in our present formula as follows:

$$\text{Index of excretion} = \frac{\text{Rate of urea excretion} \times \sqrt{\text{Concentration in urine}} \times \text{Constant}}{\text{Weight of individual} \times (\text{Blood urea})^2}$$

In order to give the index a constant value of 100 for the ideal normal, and in order to determine the numerical value for the constant, certain arbitrary methods of expression of the various factors must be adopted. We have adopted the same methods as those used by Ambard, that is, the expression of rate of urea excretion as grams per twenty-four hours, the concentration in the blood and urine as grams per liter, and the weight of the individual in kilograms. Urea, and not urea nitrogen, is used throughout. It should be distinctly understood that other methods of expression of the various factors would not change their constant relationship, or the index, but would change merely the numerical value of the constant of the formula. When variables which give an Ambard's coefficient of 0.080, the figure chosen as the ideal normal, are substituted in the formula, the constant must have a value of 8.96 to give an index of 100. The mathematical derivation of the new formula is discussed in detail in our previous papers.[12] It reads:

$$\text{Index of Urea Excretion (I)} = \frac{D \sqrt{C} \times 8.96}{Wt \times Ur^2}$$

D = Grams urea excreted per 24 hours.
C = Grams urea per liter urine.
Ur = Grams urea per liter blood.
Wt = Body weight of individual, in kilograms.

The rate of excretion is not actually determined for twenty-four hours, but for a shorter period, usually seventy-two minutes (one-twentieth of twenty-four hours), the calculation being made on a basis of grams per twenty-four hours. It is important to remember that it is not the actual twenty-four hour excretion of urea that is essential, but the rate of excretion at the time of observation.

Substitution in the foregoing formula of values obtained by observation in normal individuals should give values for the index approximating 100. The actual variations in Ambard's laws in normal individuals are magnified by this formula, the variability appearing to be much greater than when the same results are expressed in the form of Ambard's coefficient. When observations are made under the proper conditions, values for the index of less than 80, corresponding to an Ambard's coefficient of 0.090, should never be obtained in normal individuals, and no normal subject should be repeatedly below 100. Values above 100 are the rule, and values up to 180 and 200 may occur. Much higher values may be obtained under certain pathologic conditions, associated with an increase in the rate of urea excretion. It is perhaps unfortunate that such apparently wide divergence occurs among normal persons, and in the same normal individual. This is a result of expressing the laws in this form, and it does not affect the value of the index as a measure of abnormal variations.

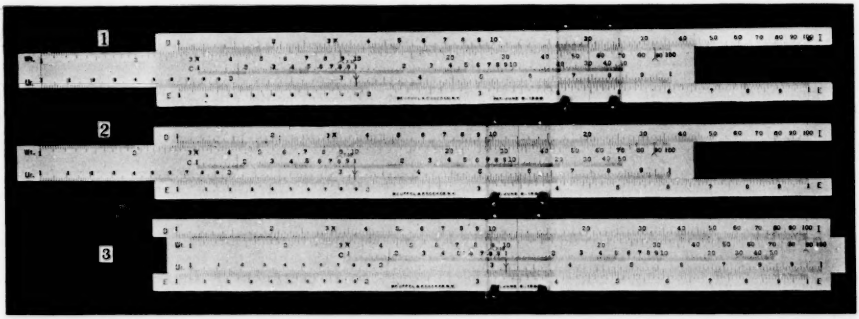

Fig. 2.—Ten-inch slide rule adapted to the calculation of the Index of Urea Excretion.

Example

Grams urea excreted per 24 hours, D = 20.0
Grams urea per liter of urine, C = 11.0
Grams urea per liter of blood, Ur = 0.330
Body weight, in kilos, Wt = 55.0

$$\text{Index} = \frac{D\sqrt{C} \times 8.96}{\text{Wt.} \times \text{Ur}^2} = \frac{20.0\sqrt{11.0} \times 8.96}{55.0 \times (.330)^2}$$

1. 55.0 on Wt scale is set opposite 20.0 on D scale, first position.
2. Hair line on runner is moved to 11.0 on C scale, second position.
3. Slide is moved so that 3.30 on Ur scale is at hair line on runner, third position.

Reading is now made at the arrow which points to scale I and is at 100. Therefore Index, I = 100.

METHODS FOR OBSERVATION

Observations can be made at any time, without regard to diet, since application of the laws is independent of the nitrogen intake. It is preferable, though not essential, that the observation should not be made too close to the taking of food, since the most rapid changes in the various factors occur during the height of digestion and absorption. Since observations require neither the introduction of a foreign substance, nor the ingestion of weighed amounts of food, they may be made without regard to vomiting, coma or delirium, and interfere in no way with any plan of treatment that is being carried out. Frequent observations may thus be made without the necessity of interrupting a dietetic treatment with test meals.

The essential points in an observation are (1) the collection of urine over a carefully timed period, (2) the collection of blood near the middle of that period, and (3) accurate determination of the urea content of the samples of blood and urine.

Our usual routine is as follows: The patient is given from 150 to 200 c.c. of water, in order to insure a free flow of urine. One-half hour later, in order to start with the bladder empty, he voids. The patient is catheterized if necessary, as in urine retention or in the case of coma. The time of voiding is recorded to within one minute. About thirty-six minutes later, from 7 to 10 c.c. of blood are withdrawn from an arm vein into a dry tube containing a few milligrams of potassium oxalate or citrate to prevent clotting. At the end of seventy-two minutes from the first voiding the bladder is again emptied, and the urine carefully measured to within 1 c.c. and used for analysis. The patient takes no food or water during this period. Otherwise no restrictions are placed on him.

The seventy-two minute period is merely for convenience, as being one twentieth of twenty-four hours. Any other period, preferably not too long, will serve. Ambard preferred a period of thirty-six minutes, but the possibility of error in the collection of the specimen is doubled when the time is halved. If it is desired to carry out a simultaneous phenolsulphonephthalein test, the sixty minute or two hour phthalein period may be used, half of the urine being used for the phenolsulphonephthalein reading, and the other half for the analyses.

Analyses should be made by the most accurate, convenient and rapid method available for determination of urea in the blood and urine. The method requires more than the usual degree of accuracy in clinical laboratories, as a relatively slight error in analysis may introduce a considerable error into the formula. The urease method, introduced by Marshall,[13] fulfils all of the requirements. This method depends on the breaking down of urea into ammonia and carbon dioxid by the specific enzyme found in the soy bean, and the subsequent determination of the ammonia. We have used the permanent preparation

13. Marshall, E. K., Jr.: A Rapid Clinical Method for the Estimation of Urea in Urine, Jour. Biol. Chem., 1913, xiv, 283; A New Method for the Determination of Urea in Blood, ibid., 1913, xv, 487; The Determination of Urea in Urine, ibid., 1913, xv, 495.

of urease described by Van Slyke and Cullen,[14] and carry out the determinations in the manner which they prescribe. With careful technic and control of the reagents, this method gives consistently accurate results. It is very simple, very rapid, and requires the minimum of manipulation. Three analyses are necessary; blood urea, urine urea and urine ammonia. Urine ammonia is determined in order to correct the urea figure for preformed ammonia, which is also determined in the urea method. Duplicate determinations

TABLE 1.—ILLUSTRATION OF INDEPENDENCE OF INDEX AND NITROGEN INTAKE *

Date, 1915	Weight, Kg.	Grams Nitrogen in 24 Hours					Urea Excretion, 72 Minute Period			
			Output							
		Intake	Urine	Stools	Total	Difference	Gm. per liter blood, Ur.	Gm. per liter urine, C.	Gm. per 24 hours, D.	Index of Urea Excretion, I.
Nov. 5...	65.0	19.2	16.1	3.15	19.25	—.05	0.858	9.87	37.5	22.0
Nov. 12...	64.8	9.6	7.92	1.61	9.53	+.07	0.499	10.68	12.8	23.2
Nov. 16...	64.8	9.6	6.6	2.92	9.52	+.08	0.411	7.06	11.0	24.0
Nov. 30...	65.4	4.8	3.48	1.37	4.85	—.05	0.211	4.37	3.32	21.4

*Case 1.—C. A. P., man, aged 45. Diagnosis: general arteriosclerosis, chronic interstitial nephritis.

on blood are advisable, as a higher degree of accuracy is thus obtained. The determinations are run simultaneously in the same apparatus, and require little attention.

CALCULATION OF THE INDEX

The results from the determinations are calculated to the form in which they are to be expressed in the formula. The weight of the individual, without clothing, should be known to within one kilogram. The four variables are substituted in the formula, and the index calculated. Calculation has been rendered simple by the use of a special calculating device, illustrated in Figure 2. With this device, which is a modified 10-inch slide-rule, one needs to remember neither the formula nor the mathematical principles involved. With a little practice in reading the scales, calculation becomes purely mechanical, and requires only a few seconds.[15] Without this slide-rule, calculation is most easily performed with an ordinary slide-rule, or by the aid of logarithms.

APPLICATION OF THE INDEX

Numerous studies have been made, or are in progress, using the index as a measure of urea function. It is not the purpose of this paper to present cases or conclusions, but certain points regarding the applicability and value of the index are illustrated.

Table 1 illustrates the fact that the index is independent of nitrogen intake. It also shows clearly that the actual blood urea figure may be very misleading, if taken by itself, as an indication of the ability of the kidneys to excrete nitrogen. In the case illustrated, reduction of nitrogen intake was followed by a corresponding decrease in nitrogen elimination, the patient coming rapidly to equilibrium. The balance between intake and output was maintained at a lower level of urea in the blood, the index remaining constant. Had the blood urea alone been determined at the lowest level, which is lower than the usual normal, one could not have said that there was evidence of impaired renal function. By application of the index, the actual ability of the kidney to excrete urea is seen to be the same at the lowest level in the blood as at the highest.

This case also throws light on the mechanism of so-called nitrogen retention. One can easily see that the increased level of urea in the blood on the higher nitrogen intake is purely compensatory, and is not due to a lack of ability on the part of the kidney to excrete the larger amounts of urea being formed in the body. The kidney actually does excrete the larger amounts of urea just as well as the smaller amounts, but it requires a higher concentration of urea in the blood to bring this about. To speak of nitrogen retention on the basis of increased concentration of nonprotein nitrogen in the blood is therefore apt to be misleading.

RELATION TO PHENOLSULPHONEPHTHALEIN OUTPUT

Numerous simultaneous observations on urea and phenolsulphonephthalein elimination make it appear that the mechanism is the same in the two instances. The curves of the percentage of phenolsulphonephthalein excreted in two hours, and of the urea index are parallel and are quite striking. No considerable divergence has been found in any case, with the exception of some patients suffering from heart failure. These subjects were not excreting enough water to carry off the urea formed in the body, but were able to eliminate phenolsulphonephthalein fairly well. In Table 2 are

TABLE 2.—ILLUSTRATION OF THE COMPARISON BETWEEN THE UREA INDEX AND PERCENTAGE OF PHENOLSULPHONEPHTHALEIN EXCRETED IN TWO HOURS

Subject	Diagnosis	Blood Urea, Grams per Liter	Urea Index	Phenolsulphonephthalein, Per Cent. in Two Hours
1	Mitral stenosis	.132	250	83
2	Parenchymatous nephritis	.216	139	66
3	Mitral stenosis	.196	105	65
4	Acute nephritis (convalescent)	.383	92	46
5	Heart block	.480	91	58
4	Acute nephritis (convalescent)	.395	89	51
4	Acute nephritis (convalescent)	.317	68	41
6	Chronic nephritis	.388	60	45
4	Acute nephritis (convalescent)	.406	56	34
7	Chronic nephritis	.446	52	41
8	Chronic nephritis	.437	47	38.5
7	Chronic nephritis	.454	44	33
7	Chronic nephritis	.546	39	42
8	Chronic nephritis	.400	37	27
4	Acute nephritis (convalescent)	.634	33	25.5
9	Mercuric chlorid poisoning	.610	19	15
10	Chronic nephritis	.488	18	25
11	Chronic nephritis	.977	8.1	8
11	Chronic nephritis	1.016	7.9	8.5
12	Chronic nephritis	1.850	7.4	7
4	Acute nephritis	1.320	7	6.5
4	Acute nephritis	.966	6.1	13.2
13	Chronic nephritis	1.110	4.2	2.5
14	Chronic nephritis	2.147	1	Trace
11	Uremia	3.430	0.27	0

given figures comparing the results by the two methods. These observations were all in individuals who were excreting water at a rate sufficient to eliminate all the urea being formed in the body. They were either simultaneous observations on phenolsulphonephthalein and urea elimination, or the two observations were made within a short time of each other.

These figures are in close agreement with those of a similar study published by Widal, Weill and Vallery-

14. Van Slyke, D. D., and Cullen, G. E.: A Permanent Preparation of Urease and Its Use in the Determination of Urea, Jour. Biol. Chem., 1914, xix, 211; id., THE JOURNAL A. M. A., May 16, 1914, p. 1558. Urease is prepared according to the method of Van Slyke and Cullen by the Arlington Chemical Company of Yonkers, N. Y., and furnished with directions for use.

15. The rule, with directions for use, may be obtained from Keuffel and Esser Co., 127 Fulton Street, New York. The same rule is used for calculation of the chlorid formula described in previous papers (Footnote 12).

Radot.[16] Their results are reproduced in graphic form in Figure 3, their figures for urea excretion being recalculated in the form of the index of urea excretion. Both studies show a remarkably close parallelism between the index and the percentage of phenolsulphonephthalein excreted in two hours. In the cases with normal or increased excretion of both urea and phenolsulphonephthalein the figures for the index are naturally higher, since the ideal normal index is 100, and higher figures are attained in persons with increased excretion, while the normal phenolsulphonephthalein excretion is about 60 per cent. in two hours, and 100 per cent. can be approached by individuals with increased excretion, but not exceeded. In the lower figures the two tests show in practically every instance the same diminution in rate of excretion of urea and of phenolsulphonephthalein. Both the table and the graphic chart show the failure of the blood urea figure alone to indicate the degree of disturbance in urea elimination, since many cases show blood urea figures below the upper limits in normals, though both the index and phenolsulphonephthalein figures are low.

These findings confirm the value of the use of phenolsulphonephthalein as a clinical test of the ability of the kidneys to excrete substances belonging in the same class with urea. While a rational basis for the use of phenolsulphonephthalein is thus given, certain factors make the direct determination of urea function of still more value than the phenolsulphonephthalein. In the first place, it is a direct determination of a normal function, of which the phenolsulphonephthalein test is an indirect determination. Interpretation of possible discrepancies between the two methods must recognize this fact. For study of the effects of treatment in a given case, the index is certainly the more delicate indicator, and the line of demarcation between normal and abnormal cases is sharper than in the case of phenolsulphonephthalein. The index has an added advantage in that, as it tends to approach zero, smaller differences are of greater import, and are more easily determined than in the case of phenolsulphonephthalein. Thus the difference between 3 and 6 per cent. phenolsulphonephthalein excreted in two hours is difficult to determine colorimetrically, while it is a very considerable difference in the case of the index. From the standpoint of determining whether the condition is stationary or progressive, the index is therefore much more delicate than determination of the small amounts of phenolsulphonephthalein excreted in cases with advanced impairment of function.

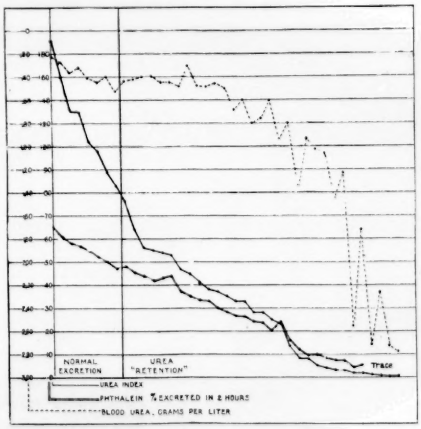

Fig. 3.—Graphic illustration of close agreement of findings regarding urea and phenolsulphonephthalein excretion. (From figures published by Widal, Weill and Vallery-Radot.)

In addition to the index itself, the analyses necessary in determining it are of direct value. We have learned to attach a certain amount of import to the blood urea figure alone. The index, therefore, adds enormously to the value of an already recognized method, with the addition of practically no technical details. The determination of urea in the urine, the only laboratory work required in addition to the blood urea, demands only a moment's extra time.

Neither the phenolsulphonephthalein nor the index, in itself, furnishes positive information as to the cause of the impairment of function. Indirect information is, however, furnished by the determinations made in arriving at the index. A low index, associated with a diminished excretion of urine, with a high urea content, suggests passive congestion of the kidneys. The same index, occurring with the excretion of normal or increased amounts of urine, with a low urea content, may be characteristic of certain forms of nephritis. Thus additional information is obtained in the determination of the index.

For the present we prefer to study cases of nephritis with both the index and the phenolsulphonephthalein test. Each serves as a check on the other, and the maximum of information is obtained in the simplest way possible.

PRACTICAL VALUE OF THE METHOD

Applicability of the method as a guide to diagnosis, prognosis and treatment will depend on further clinical reports, but certain facts have become evident:

An index below 80 is to be considered as abnormal, though not necessarily seriously so. In renal disease an index below 50 is indicative of a considerable degree of impairment of functional ability. The amount of damage to the kidneys, it is believed, is increasingly greater as the index is lower, and tends to approach zero. But a low index may be only temporary, as in the passive congestion of heart failure or in acute nephritis, and may return to normal on improvement of the condition which is responsible for impaired function. The actual figure obtained for the index should be of value in prognosis in renal disease, though renal function alone is often not the determining factor in prognosis. In our experience a low index has at times been the first indication of a serious kidney involvement. When the condition is stationary, life may be maintained for some time with a low index. For example, we have seen patients with chronic nephritis survive for several months with an index of from 5 to 8, and we have seen recovery from acute nephritis after a number of weeks, during which time we have obtained the same figures. In another instance, the patient survived for

16. Widal, Weill and Vallery-Radot: L'Epreuve de la Phénolsulfonephthaléine: Parallelisme avec l'étude de l'excretion de l'urée chez les brightiques, Presse méd., July 22, 1914, p. 565.

about a month after the index was as low as 1.2. Such figures, in chronic disease, certainly determine a grave prognosis. But, unless the condition is known to be progressive, it is difficult to give a prognosis with regard to the duration of life. Other aspects of the disease must, of course, be considered in attempting a prognosis.

Progressive decrease in the index, usually associated with a corresponding increase in the concentration of urea in the blood, is of serious import. Two cases have recently been under observation in which such a fall in the index was followed by death within a short time. In one case the fall in the index was the first indication of impending uremia, although the first symptoms did not occur until ten days after the discovery of a change in the index.

Use of the index as a guide to dietetic or other treatment of nephritis must depend on further studies. It is doubtful whether the diminished urea content of the blood which follows a diminished nitrogen intake has any direct beneficial effect. Whether a long continued rest of the urea function will improve that function remains to be demonstrated. On general principles, an impaired function should not be overtaxed, and a restricted protein intake should be advised in cases with a markedly lowered index of excretion. But brutal restriction of nitrogen intake to below the nitrogen requirement of the body does not seem to be indicated in cases capable of excreting normal amounts of urea, though the blood nitrogen may be high and the index low.

The influence of diuretic drugs also requires further study. Here the findings will depend on the type of case studied, and it is necessary to have a satisfactory method for grouping them. Study of diuretic drugs, involving also their effect on chlorid function, is in progress.

Application of the index is seriously interfered with when water excretion is greatly diminished, as in passive congestion or in some forms of nephritis. The laws of urea excretion depend on a sufficiently rapid rate of urine excretion, and they fail to apply when the water output is greatly diminished. We make it a general rule not to attempt to apply the index when a rate of urinary outflow equal to at least 500 c.c. in twenty-four hours cannot be attained. Otherwise there are practically no limitations as to its applicability.

SUMMARY

We present a relatively simple method, based on the laws of Ambard, for the direct quantitative determination of the state of the function which has to do with the elimination of urea. The method is applicable in a wide range of cases, easy of performance, and gives results which should prove of great value in the recognition, prognosis and treatment of certain conditions associated with impairment of renal function.

FOREIGN BODIES SWALLOWED BY AN INSANE WOMAN

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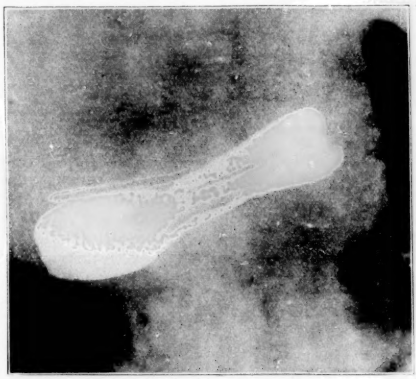
ROCHESTER, MINN.

The practice by professionals of swallowing foreign bodies, and the mania for doing so by the insane, has contributed to medical literature reports of instances of the most grotesque assortment of articles having been retained in the stomach for long periods, without injury to the mucous membrane and without producing symptoms. The case I report is somewhat novel in that the patient exhibited a preference for one article, namely, teaspoons. The limit of this woman's capacity, had her habit not been discovered and interrupted, can only be conjectured. The nurse in charge of a ward at the Rochester State Hospital by chance saw a teaspoon disappear into the woman's mouth. A roentgenogram was immediately made which showed apparently three or possibly four spoons in the stomach. The woman was 29 years of age, was evidently in perfect physical health, and, as far as could be determined, had suffered no distress or inconvenience from the presence of the spoons.



Roentgenogram showing teaspoons and a hairpin in the stomach.

Sept 1, 1915, a gastrotomy was done, and seven teaspoons, instead of the supposed three or four, were found. They were lying together "spoon fashion" (which explains the roentgenogram), and a hairpin, some straw and small pieces of twigs lay around them. After removal of the spoons and débris, the stomach was carefully examined for possible injury. Other than a rather large ptotic organ and a hypertrophied and congested mucous membrane, however, no evidence of injury was found. The spoons, which were of plated Utah metal, were not bent and showed no erosion. They were a little larger than a standard teaspoon, being 6 inches in length and 1½ inches across the bowl. The patient made an uneventful recovery.

A Medicolegal Judgment.—In Ontario recently a woman, on each of whose breasts an operation had been performed, brought action for damages against the surgeon who performed the operation. The patient consulted her physician about a lump in one of her breasts. He found another lump in the other breast and secured her consent to the removal of both lumps. Some time after the operation, trouble arose in the arm of the second side operated on. The surgeon was accused of doing an operation in which consent had not been given. The presiding judge, after hearing a considerable amount of evidence, held that a surgeon is justified in performing a second operation under circumstances in which the case demands more be done than first detected or revealed; in fact he might be open to blame if he did not perform such operation, if it could be shown that such operation was necessary for the cure of the patient.

CAULIFLOWER EAR

DON H. PALMER, M.D.
SEATTLE

I first became interested in "cauliflower ear" ten years ago, because of the interest I have always taken in athletes and athletic sports. At that time I encountered all the difficulties which those who have undertaken the treatment of such cases have experienced.

Fig. 1.—Ready for operation, with points of injection for anesthesia and proposed incision indicated.

I tried the various published methods of treatment, such as pressure applied to the ear in every conceivable manner, both before and after aspiration, in hot, cold, wet and dry compresses with tight bandages, collodion, sodium silicate, starch and paraffin dressings.

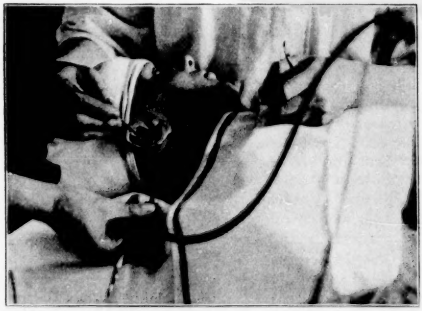


Fig. 2.—Approximating the skin and perichondrium to the cartilage by negative pressure.

I used drains of catgut, silkworm gut, rubber tissue and gauze, with the same unfortunate results, until about five years ago I began the use of my present method.

ETIOLOGY AND PATHOLOGY

From a careful history and the physical findings, I consider every case of traumatic origin. The degree of trauma required is extremely variable, just as in the case of bone fracture. I believe the commonest cause of the injury is a glancing blow which folds the ear on itself and rolls it against the skull. A careful examination will always reveal a fracture of the cartilage at the site of one or more of the heavier eminences, commonly the antihelix.

The perichondrium which is more fibrous and elastic is not broken, but is stripped from the cartilage.

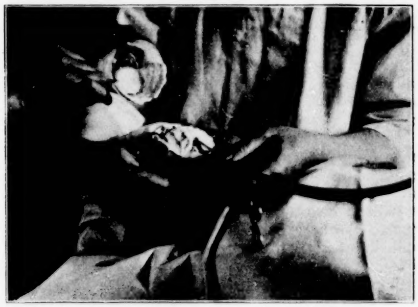


Fig. 3.—Plaster cast being applied, showing mold behind the ear. Catheter still in position and negative pressure continuous.

always on the anterior surface where it is more loosely adherent.

The hemorrhage accompanying the injury continues, raising the perichondrium and skin, thus producing the various degrees of deformity.

As time goes on the blood becomes mixed with a clear, viscid, mucoid substance, in the midst of which may be found free clots of blood. In from one to four weeks organization takes place, and a sharp chisel or curet is necessary to remove the débris.

Fig. 4.—Plaster cast held firmly against the head with adhesive plaster. Probe in the drainage hole left by withdrawing the catheter.

After a few months the organization is complete, and there may be a condition varying from fibrocartilage to solid bone with contractions, which produces the various types of deformity.

SYMPTOMS

The subjective symptoms as a rule are not severe, simply pain and tenderness, most marked over the site of fracture, with at times loss of hearing, due to occlusion of the external auditory meatus from swelling. After organization, the resultant contracture and

Fig. 5.—Removal of the cast by fragmentation, dental forceps making a very satisfactory tool.

deformity produce a type of neurasthenia comparable to that of saddle nose.

The subjective symptoms of an early case are swelling, discoloration and often crepitus at the site of fracture; in an old case, deformity, thickness and rigidity.

Fig. 6.—Result ten days following the operation when cast is removed.

TREATMENT

After preparing the skin surfaces of the ear, the meatus and immediate vicinity of the face and scalp after any of the approved surgical methods except iodin, which causes intense itching, and plugging the external meatus with cotton, I make an incision under local anesthesia (Fig. 1) slightly below the prominent part of the swelling through the skin and perichondrium into the hemorrhagic cavity. All clots, newly formed cartilage or bone should be removed with a small gouge or curet, the surface of both cartilage and perichondrium being scraped until smooth.

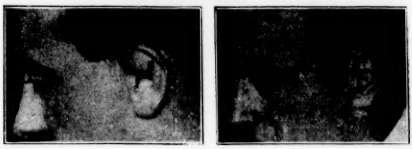


Fig. 7.—Appearance of ear three weeks after injury, and result following operation.

The incision is now closed, except for a small opening which will just admit the end of a eustachian catheter, connected through a waste bottle with a small Pynchon pump (Fig. 2).

This rapidly removes the accumulated blood, and the suction approximates the loose layer of skin and perichondrium to the cartilage.

The skin surface is now thoroughly dried and a fresh plug of cotton is placed in the external auditory canal. A generous coating of sterile petrolatum is now applied

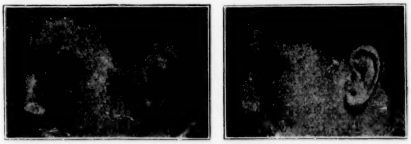


Fig. 8.—Appearance of ear three months after injury, external auditory meatus completely closed, tissues organized, and result ten days after operation.

over both surfaces of the ear and the adjacent skin of the face and scalp.

Should there be any area in which the skin and perichondrium are not perfectly approximated, I make a small mold of dentist's modeling wax or sheet lead and apply pressure at that point.

The mold, coated with petrolatum, is now placed about the ear and half a tumblerful of plaster of Paris cream, prepared by an assistant, is poured into the mold, completely surrounding the ear (Fig. 3).

Fig. 9.—Appearance of ear ten days after injury, and result following operation; note slight imperfection at the anterior angle of the helix, due to defect in cast.

We now have the ear completely encased in the plaster, with the eustachian catheter still inside the wound, and the pump working continuously. As the plaster hardens, a slight rotary motion of the catheter permits of its easy withdrawal through the cast, and

establishes a permanent drain to the wound for the escape of any newly formed fluid.

A small piece of gauze over the cast, and an adhesive dressing to prevent all motion, complete the operation (Fig. 4).

Fig. 10.—Complete occlusion of external meatus four weeks after injury, and result ten days after operation.

The cast is removed by fragmentation ten days following the operation, when the ear will be found in exactly the shape you placed it at the time of the operation, and will require no further attention (Figs. 5 and 6).

Fig. 11.—Appearance of ear two weeks after injury; ear badly traumatized in boxing contest on day before operation.

In the real old organized cases I make a mold carved from plaster of Paris to represent the normal ear, and with dentist's modeling wax make a die. After removal of the foreign substance, and the ear is perfectly soft and pliable, I force the die down on the

Fig. 12.—Commonest type of early cauliflower ear two days after injury, and result ten days after operation.

anterior surface of the ear, and then encase the whole in plaster of Paris.

617 Lumber Exchange.

Legal and Social Uses of Birth Registration.—The registration of a child's birth forms a legal record that is frequently useful and may be of the greatest importance. It establishes the date of birth and the child's parentage. It may be required to establish the child's age for attendance at public schools, or for permission to work in states where restrictions are placed on child labor; to show in courts of law whether a girl has reached the age of consent, or whether individuals have attained the age when they may marry without the parent's permission; to establish age in connection with the granting of pensions, military and jury duty, and voting. It may be important in connection with the bequeathing and inheritance of property or to furnish acceptable evidence of genealogy, and, in fact may be important and useful in possible events too numerous to mention.—J. W. Trask, *Public Health Reports*, Jan. 14, 1916.

CASE OF DIRECT AND INDIRECT UNILATERAL HERNIA *

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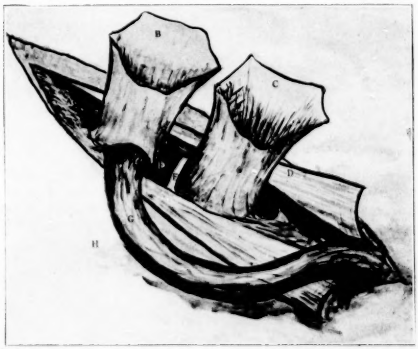
This case is reported to call attention to a condition which sometimes confronts the surgeon at the time of operation. Inguinal hernia is spoken of as either single or double, the latter term meaning bilateral. I think the term "bilateral" is preferable to "double" because in this case the hernia was unilateral, being on the right side, but at the same time it was both direct and indirect, and hence, in one sense, it was double.

The patient was a man about 48, and was first seen May 24, 1915. His occupation was engineering, principally drafting. He was thin, and had a very nervous disposition; otherwise he had been fairly well. About six weeks prior he had noticed a bulging in the right inguinal region. This bulging had increased in size following an afternoon of unusual effort in lifting. No general symptoms followed



Representation of unilateral direct and indirect hernia just prior to transfixing and tying off both sacs: *A*, internal oblique muscle; *B*, indirect sac; *C*, direct sac; *D*, external oblique aponeurosis; *E*, deep epigastric artery; *F*, vein; G, spermatic cord; *H*, skin.

the occurrence of the bulging except that the patient's nervousness was somewhat augmented. The increase in size of the bulging was associated with some pain, though not severe. The mass was spontaneously reducible whenever the patient would lie down. He had not worn a truss.

Examination revealed a swelling in the right inguinal region, apparently lying in the general path of the inguinal canal. The mass was about 2½ inches long and 1 inch wide. The lower third was slightly larger than the upper two thirds. There was an expansile impulse on coughing. The mass was easily reducible. Other anatomic structures were normal except that the abdominal muscles on both sides were weak, and also the left inguinal region was slightly weak, though there was no evidence of the presence of a hernial sac on the left side.

At operation the incision was made about half an inch above and parallel to Poupart's ligament. The external oblique aponeurosis was laid open. In freeing the cord from its surroundings in the canal a peritoneal bulging

* Read before the Los Angeles County Medical Association, Nov. 18, 1915.

was encountered at a position internal or mesial to the deep epigastric blood vessels.

Before this sac was isolated and opened, search was made for an indirect sac. This was easily found in the usual manner by separating the fibers of the cremasteric fascia from the cord. This indirect sac was isolated and opened. Through the opening in this sac the inner aspect of the inguinal region was explored. This exploration revealed the fact that the first sac seen, which was a direct one, was much larger than had been originally suspected. The two sacs were approximately equal in size, being about 1½ inches long and 1¼ inches wide.

Each sac was transfixed with plain catgut and tied. From that point on the operation was after the method of Bassini with the modification, as recommended by Coley in suitable cases, of a stitch above the cord.

The illustration is a representation of how the two sacs appeared at the time of operation. There was one sac on each side of the deep epigastric vessels. These two sacs were entirely independent of each other.

This case illustrates well the desirability, in cases in which there is an apparent general weakness in the region of the inguinal canal, of making a search for both a direct and an indirect sac on the same side.

It has been remarked that when recurrences follow a Bassini operation, they are generally direct hernias. It is my belief that if the operator had made a search for two sacs at the time of operation in a certain number of those cases, the present large percentage of cures would be increased.

602 Hollingsworth Building.

Special Article

WHAT THE CIVILIAN DOCTOR CALLED TO ACTIVE SERVICE WITH THE ARMY SHOULD KNOW

I. DUTIES IN THE ZONE OF THE INTERIOR

Should the government require troops above the strength of the regular army and the available militia, it would also require personnel for the medical department to serve with them. This would mean that a call would be made on the services of civilian physicians and surgeons to enter the volunteer or other forces raised. They would be wanted in the same proportion as medical officers of the regular army.

To every regiment of infantry or cavalry four surgeons are assigned by present regulations: for a division, about 23,000 troops, ninety-nine medical officers and 889 hospital corps men. This includes the personnel of the sanitary train which accompanies each division in the field, and is composed of the field hospital and ambulance companies. In addition, personnel will be necessary for the line of communication, and the base and general hospitals, in the service of the rear. This totals a large number of medical officers when we deal with from 200,000 to 500,000 men. It is important to remember that the personnel allowed an army on a peace basis is always inadequate for the same army in time of war. This is better understood when it is comprehended that the sanitary troops, composed of medical officers and hospital corps soldiers, with a regiment or division, are for duty only with such organizations. All the wounded and sick who are separated from the organization must be cared for when evacuated to the rear. Retained at the front they immobilize the army to a greater or less extent. Consequently, we have to start with an army with its allotted personnel of medical officers: soon after taking the field the wounded and sick leaving the army require medical attention away from the field of military operations.

A regular supply service is also necessary to feed and transport them and care for them.

Thus, at present in Europe a division which is once in contact with the enemy and has two or three general engagements in a month will lose from 20 to 60 per cent. of its original strength. All the wounded must be eventually cared for, not by the personnel at the front but by a new personnel called into existence by the war for this purpose. In military operations the field is divided, like all Gaul, into three distinct areas or districts in which the troops serve different functions. In the home territory is the service of the interior: here briefly are the mobilization camps where soldiers are recruited, equipped and trained — today in England this can be observed in the so-called Kitchener's armies. Next we have the line of communications, based on home territory with the head near the troops in contact with the enemy, and finally the zone of advance, which is occupied by the actively engaged forces: these are represented today, for example, by the British armies in France: the line of communications, of course, being represented by the sea and rail connections between England and her forces in France. It is to this personnel serving in the rear, the zone of the interior, that most untrained and partially trained medical officers would be assigned. With experience they would expect to be sent to fill vacancies occurring at the front, and on the line of communications.

What are the principal duties of the medical officers in the zone of the interior, where they would find their first detail? This is the question which is of much interest to many patriotic physicians and surgeons who would be liable to service in war. In a general way it is the adjustment of the practice of their profession to military conditions: the study of the soldier and the professional care of him when sick or wounded, and last, but most important, the prevention of disease. There is also through all these duties wherever performed the division into administrative work and medical work proper. As service in the line of communications and the zone of the interior will be the lot of most civilian physicians, at least at first, the duties there will be considered first. We must assume, of course, that a doctor on becoming a medical officer is properly prepared to do general practice: if he has a specialty, so much the better; it will be useful; even pediatrics and gynecology are called on in army posts, and when troops are occupying hostile territory. If any are more important than another, those expert in sanitation and surgery would be of most value.

Among the first duties required of the medical officer after his joining during mobilization is to make the physical examinations of recruits and later of disabled soldiers. The physical examination of the recruit is of the utmost importance: on his physical condition depends the mobility of the army. To insure this, certain standards are set by the War Department as the result of its experience in recruiting and in the field. An honest adherence to these standards is absolutely necessary. They are to be found in the "Instruc-

tions for the General Recruiting Service, U. S. Army," and in general orders and circulars issued from time to time by the adjutant general's office, which should be on hand at the places of examination. It must be remembered in making these physical examinations, and many of them have to be made in our country in emergency, as there is no reserve, that not only is the government to be protected against unjust pension claims by excluding the physically deficient at these examinations, but also the exclusion of the recruits suffering from infectious diseases is of the greatest importance. It was our experience at the beginning of the Spanish-American War, and in fact during every war, that the recruit brings to the mobilization camp the infection of many diseases, and this is only a natural circumstance, as the young recruit represents the susceptible material in a community. He is protected neither by former attacks of disease nor by mature judgment and caution. We should be on the lookout, then, for symptoms indicating the presence of the exanthems, tuberculosis, and in the southern communities especially, dysentery and hookworm disease. Of course the venereal diseases are omnipresent, and if not always incapacitating or showing open lesions, should be noted, if suspected, for proper treatment.

The recruit meeting the physical requirements, when accepted and sworn in, should be immediately vaccinated against both smallpox and typhoid fever. When he has been accepted as a soldier, it becomes the business of certain medical officers, in conjunction with the line officers, to look after the health and sanitary conditions surrounding the recruit. He must be given sufficient exercise, and, at the same time, immature recruits must be protected against excessive work of a character that might produce heart strain if indulged in without sufficient preliminary training. He must keep himself personally clean and also his surroundings, his barracks or tent, his bed clothing. That all this is done and done properly and intelligently devolves on the line officer, and a certain amount of it must be supervised and inspected by the medical officer.

The soldier is given an opportunity daily at an appointed hour and place to see and consult a medical officer, if necessity requires it. Of course emergencies demand medical assistance at any hour, day or night; but for the recruit who is suffering from minor ills or experiencing prodromal symptoms of acute diseases, an opportunity is given to see the doctor at "sick call." As the hour and place are published in orders, and as the location of the hospital or infirmary is a matter of common knowledge in the camp, men ailing may readily find their way.

The surgeon misses a great opportunity if he does not realize that this informal consultation, known as sick call, should be taken most seriously. It is almost the first point of contact between the medical department and the soldier, and it should be an occasion to obtain his confidence and to learn something of the individuality of the man. It is at this point that preventive medicine can be most advantageously practiced. It is here that sharp lookout should be kept for the sporadic cases that usher in an epidemic, and it is by the isolation and early treatment of these cases that we prevent disease from spreading in camps or barracks. Opportunity is also given for ascertaining the physical condition of the man: whether he is in need of special corrective exercises, or whether he is getting too much exercise; whether his teeth are in good condition to masticate the field ration; whether he is suffering from vermin; whether he is bathing and washing his clothes sufficiently, and one of the most important things, whether he is assimilating the food that is furnished him; if he is not, something is wrong — either the food or the digestive system. The malingerer and the hypochondriac are discovered at sick call, the young soldier suffering from nostalgia: all can be improved by sympathetic and intelligent handling. Much of the inner life of the company organization to which the soldier belongs comes out at sick call: the relations of the men, the treatment they receive from officers and noncommissioned officers, the quality and quantity of food, the cleanliness of their barracks and persons, whether or not they have been vaccinated against smallpox and typhoid fever, can be ascertained here, and also the presence of venereal disease among the civilians in the nearby communities frequented by the soldier; in brief, sick call is one of the most intimate points of contact between the medical officer and the soldier of the line, and one of the most illuminating to the earnest medical officer.

Inasmuch as the barracks at present provided for troops in the United States are barely sufficient to accommodate them, recruiting of new troops will require new shelter for them. This is usually provided by tents, the new troops being gathered into mobilization camps where they are given physical examinations, clothed and equipped, vaccinated, and given the instruction which is to turn them into soldiers. These camps are places of instruction not only for soldiers but for officers as well, and it is usually here that the civilian physician begins to acquire his first experience in military life. He must learn the lessons of obedience and discipline even more quickly and definitely than the soldier, because in his hands reposes more power. It is here that the medical officer begins his acquaintance with the supply departments of the army, learns how to obtain equipment and food for himself and the men in his charge, and learns methods of accountability for government property and to unwind the much despised red tape. The longer experience and the responsibility of having in his possession considerable amounts of government property will end by convincing him of at least some of the necessity of tying it up in red tape. There are times, it is true, when this must be cut through, and the occasion does not permit the untying; experience and good judgment will tell him when.

In a general way, the professional duties at a camp of mobilization are not onerous, except for the first set of physical examinations. Nevertheless, it is the place to learn how preventive medicine is practiced among troops; to learn the methods of handling the hospital corps soldiers over whom he has control; to learn the methods devised by army officers for handling sick and wounded in the field, and the place to acquire that state of discipline and mental alertness that goes to make up the character of the soldier as distinguished from the recruit.[1]

(To be continued)

1. Books for the perusal of the medical officer: Army Regulations, 1913, par. 1386, pp. 269 et seq. Manual for the Medical Department (new edition now in print). Straub: Medical Service in Campaign, Ed. 2, United States Field Service Regulations, 1914.

Aim of the Health Movement.—Our health ideals should rise from the mere wish to keep out of a sick bed to an eagerness to become a well-spring of energy.—Fisher and Fisk, "How to Live."

Therapeutics

CARDIAC DILATATION

Degeneration and disturbances of the heart muscle and cardiac dilatation are found more and more frequently at an earlier age than was the case formerly. Several factors seem to be at work. In the first place, infants and children are now being saved, though they may have inherited, or acquired, a diminished power of resistance against disease and against the strain and vicissitudes of adult life. Another important factor is the strenuosity of business life, the rapidity of social life, the tension and speed of the industrial life of both sexes, and competitive athletics in school and college life, to say nothing of the various other excesses of many persons.

Acute cardiac dilatation from sudden, severe overexertion is not frequent, but is occasionally seen. Hard lifting, running with loads (as two suit cases, to catch a train), persistently attempting to crank a cranky engine, or some severe exertion, as seen in competitive athletics, may cause acute dilatation.

Chronic dilatation of the heart, however, perhaps not sufficient to cause edema, slowly and insidiously develops from chronic and persistent strenuosity or from the insidious irritations caused by absorbed toxins due to persistent intestinal indigestion. A fibrosis of the heart muscle and of the arterioles gradually develops, and the heart muscle, sooner or later feels the strain.

It is now not unusual for a physician, in his office, to hear his patient say "Doctor, I am not sick, but just tired," or, "I get tired on the least exertion." Physicians do not note carefully enough the condition of the heart in patients who are just "weary," or even when they show beginning cardiovascular-renal trouble.

The primary symptoms of myocardial weakening are slight dyspnea on least exertion; slight heart pain; slight edema above the ankles; often some increased heart rapidity, sometimes without exertion; inability of the heart after exertion to return immediately to its normal frequency; slight dyspnea on least exertion after eating; flushing of the face or paleness around the mouth, and more or less dilatation of the veins of the hands. All of these are danger signals that may not be especially noticed at first by the person; but if he reports such symptoms to his physician, the latter shou'l not only make a thorough physical examination, but particularly note the size of the heart.

If a roentgenographic and fluoroscopic examination cannot be made, careful percussion, with attention to the region of the apex beat, the rapidity and action of the heart on sitting, standing and lying, and the length of time it takes while resting after exertion for the speed of the heart to slacken, will show the heart strength.

Slight dilatation being diagnosed, the treatment is as follows:

1. Rest, absolute if needed, should be prescribed, and all physical exercise and business cares prohibited.

2. The amount of food should be reduced, and the food should be of the simplest. Alcohol should be stopped, and the amount of tea, coffee and tobacco reduced.

3. If medication is needed, strychnin sulphate $\frac{1}{40}$ or $\frac{1}{30}$ grain three times a day, and tincture of digitalis in 5 to 10 drop doses twice a day, will aid the heart to recover its tone.

Such treatment, when soon applied to a slowly dilating and weakening heart, will establish at least a temporary cure and will greatly prolong life.

If these heart conditions are not diagnosed and properly treated such patients are liable to die suddenly of "heart failure," of acute dilatation of the stomach, or of angina pectoris. Unsuspected dilated hearts are often the cause of sudden deaths during the first forty-eight hours of pneumonia.

The purpose of this article is not to discuss the treatment of high blood pressure, albuminuria or other similar conditions that may be associated with cardiac dilatation. This particularly dangerous condition should be more frequently noted and treated. Digitalis in such cases rarely raises the blood pressure, and small doses are sufficient. If more heart pain is caused, the dose of digitalis is too large, or it is contraindicated. Also, digitalis need not be long given especially as Cohn, Fraser and Jamieson[1] have shown by the electrocardiograph that its effect on the heart may last twenty-two days, and never lasts a shorter time than five days. They also found that, when digitalis is given by the mouth, the electrocardiograph showed that its full activity was not reached until from thirty-six to forty-eight hours after it had been taken. From these findings it will be seen that if it is necessary to give a second course of treatment with digitalis, within two weeks at least from the time the last dose was given, the dose should be much smaller than at first.

If individuals of our strenuous life who are over 40 would, once or twice a year, present themselves for a heart and other physical examination, there would not be so many sudden deaths of those thought to be in good health. It may be a fact, as asserted by many clinicians, that chronic myocarditis and fatty degeneration of the heart cannot be diagnosed by any special set of symptoms or signs. It is a fact, however, that a pretty accurate estimate of the heart strength can be made by a careful physician, and if danger signals are noted and signs of probable heart weakness are present, life may be long saved by good treatment rigorously applied. The patient must cooperate, and be harshly warned of his condition. Many such patients, noting their impaired ability, do not seek medical advice, but, thinking all they need is more exercise, they walk, golf and dance to excess and to their cardiac undoing.

1. Cohn, A. E.; Fraser, F. R., and Jamieson, R. A.: The Influence of Digitalis on the T Wave of the Human Electrocardiogram, Jour. Exper. Med., 1915, xxi, 593.

A Wreath for Trudeau

"Trudeau is dead." The broken words
Whispered along the thread of wire
Fell on my ears. A smile, wraithlike,
Slunk away. The lilt of a song
Ceased. The sun struck across my desk,
Unseen, for "Trudeau is dead."

A comrade, whistling merrily,
Flung into my room; then, seeing
My bowed head and sorrow, withdrew.
A car buzzed shrill in the alley;
A newsboy caroled in the street;
But "Trudeau is dead."

The east wind tapped at my casement;
Footsteps rang down the corridor;
Familiar sounds of the city
Went to and fro; but I, I sat,
Sphinxlike, companioned by my grief,
For "Trudeau is dead."

—Paul Lyman Benjamin.

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SATURDAY, FEBRUARY 5, 1916

FASHIONS IN SUICIDE

The use of poison has always been a prominent method employed by those who voluntarily destroy their own lives. According to the Bureau of the Census, the number of suicides reported in 1914 was 10,933, or 16.6 per hundred thousand population. Of this number 3,286 accomplished self-destruction by the use of firearms, 3,000 by poison, 1,552 by hanging or strangulation, 1,419 by asphyxia, 658 by the use of knives or other cutting or piercing instruments, 619 by drowning, 225 by jumping from high places, 89 by crushing, and 85 by other methods.

Writing a generation ago, the English analyst Blyth[1] said, "The higher the mental development of a nation, the more likely are its homicides to be caused by subtle poison — its suicides by the euthanasia of chloral, morphin or hemlock." In accord with this, among the substances employed by 1,000 male and female suicides by poison in England during the ten years 1871-1880, the opiates take first place, with a total of 423 victims, cyanids following in the second place. Phenol and strychnin also stand high in the list. Arsenic no longer appeared to be the favored medium of suicide that it was in the earlier years, and phenol (carbolic acid) was beginning to come into vogue.

According to statistics of the cases of suicide in New York City by poisoning due to the principal drugs for the past twenty-five years,[2] we must assume either that the expected higher mental development of the inhabitants of the great metropolis has not been realized or that there is an independent fashion in the methods of suicides. The data compiled by Lambert and Patterson[2] show that poisoning by arsenic and Paris green, once favorites in this country, and by phenol, which was the most prominent suicidal poison in New York during the decade 1895-1905, are on the decrease. The use of opium for the same end has never been really extensive during this period, and remains stationary. Poisoning, with intent, by illuminating gas is becoming more prominent year by year; and of late the use of mercuric chlorid is on the increase. Of the 155 cases of suicide by mercuric chlorid recorded in New York City in the past twenty-five years, 73, or nearly half of them, have occurred in the past two years. The figures for the last five years in a total of 2,126 are as follows: Paris green and arsenic, 48; phenol, 154; opium and morphin, 29; mercuric chlorid, 104; illuminating gas 1,554; other poisons, 237. The recent increase in the use of mercuric chlorid for purposes of suicide is attributed by Lambert and Patterson largely to the newspaper notoriety which was given to a case of accidental poisoning occurring a few years ago. They remind us that the public was instructed in all the details of the symptoms, and that great stress was laid, not only on the certainty of the fatal outcome, but also on the painlessness and lack of suffering which accompanied the week-long illness of the victim. This appears to have appealed to would-be suicides. Evidently there are other factors than toxicologically intelligent selection which dictate the choice of poisons by modern suicides, even in a great metropolitan district.

1. Blyth, A. W.: Poisons, Their Effects and Detection, New York, 1885, i, 28.
2. Lambert, S. W., and Patterson, H. S.: Poisoning by Mercuric Chlorid and Its Treatment, Arch. Int. Med., November, 1915, p. 865.

THE ACTIVITIES OF MUNICIPAL HEALTH DEPARTMENTS

An investigation of health departments in 219 cities of the United States has recently been completed by the Department of Surveys and Exhibits of the Russell Sage Foundation.[1] The investigation, which was carried on entirely by mail, was limited to cities having a population of 25,000 and over, according to the census of 1910. There are 227 such cities, and reports were received from all but eight of those addressed. The questions asked concerned appropriations, infant hygiene work, laboratory service, health, education and publicity, control of venereal diseases, housing regulations, dispensary service, tuberculosis work, industrial hygiene, and the number of privies.

The figures with regard to appropriations excluded all funds applied to hospitals, sanatoriums, plumbing inspection, street cleaning, removal or disposal of dead animals, refuse, garbage or night soil, and any other unusual expenditures of indirect hygienic value. The average per capita expenditure was 32.7 cents. Excluding New York, this figure drops to 27.3 cents per capita. The largest figure was that of Seattle, 98 cents, the smallest that of Clinton, Iowa, 0.75 cent. Memphis spent 93 cents, Augusta, Ga., and Pittsburgh 61 cents, and New York 58 cents. Among other small expenditures were Easton, Pa., 2 cents; Aurora, Ill., and South Bend, Ind., 3 cents; Woonsocket, R. I., 4 cents, and Lewiston, Me., 6 cents. Relatively the

1. Schneider, Franz, Jr.: A Survey of the Activities of Municipal Health Departments in the United States, Am. Jour. Pub. Health, 1916, vi, 1.

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larger appropriations are in the Southeastern states, and the smaller in the North Central states.

Summarizing the results of the questionnaire, it is found that one fifth of the cities made no inspection of schoolchildren, over a third did not offer the ordinary laboratory diagnosis for common communicable diseases, over a fourth made no effort to educate in health matters, nearly three fourths had no housing law, nineteen twentieths did not consider the hygiene of industry, over six sevenths had no program against venereal diseases, and one half had no proper organization to combat infant mortality.

The report is notable for its surprises. One would surely have expected tuberculosis to occupy a foremost place in most health work, and yet only 33.9 per cent. of the cities report the comprehensive control of this disease. The best work appears in Eastern cities, and probably reflects the antituberculosis campaigns of private organizations. It is an excellent example of the important part that private effort may take for defining the way of municipal activities.

Still more surprising is the rank of the cities geographically, the Southern and Pacific cities far outranking all others. The cities with poor health programs are invariably the cities with scanty appropriation — and few of the cities with low appropriations are situated west of Illinois or south of Indiana.

But there is one great shocking fact which probably is not generally realized. In 219 cities with a population of 29,488,321, there was spent during one entire year, for actual constructive and preventive health measures, only $9,650,515, or a sum rather less than the mere cost of one battleship.

No attempt was made to determine the efficiency of the work of the various health departments, but merely to find out whether or not certain lines of study were being followed. Certainly the results show that public health work in this country is still in its infancy, and that the appropriations granted to most health departments are grossly inadequate for the functions which they are expected to perform, in view of modern scientific knowledge with reference to health.

PROGRESS IN THE MILK INDUSTRY

More than half a century has elapsed since the passage of the first more general regulations for the protection of the milk supply in this country. Probably the first dairy laws were those enacted in Massachusetts in 1856 against the adulteration of milk by adding water, and in 1859 prohibiting the feeding of brewery waste to cattle. During the latter year the appointment of dairy inspectors was authorized, and in 1880 a minimum standard was fixed for total solids in milk.[1] In the earlier days much of the official activity in relation to milk was of the nature of inspection which assumed the character of routine police work. Gradually milk inspection duties have assumed a constructive and educational character, quite as much as a mere regulatory function. They are being based on a foundation of scientific research in which such branches as physiologic chemistry, bacteriology, human and veterinary medicine, sanitary science, rural hygiene, economics and practical dairying are involved. It has been said that the response of dairying to the progress of investigation has perhaps been more rapid than that in almost any other branch of agriculture. Here, to a very notable extent, the rule of thumb has given way to the rule of reason, and the industry has progressed as a result of a clearer understanding. As it has become a more intelligent industry, so it has likewise become a more technical and complicated one, success requiring higher skill and superior judgment, and more attention to the ultimate use of the product.

Milk is not merely a perishable food, used extensively in the feeding of invalids and infants in which it is almost indispensable; it is also a product singularly susceptible to contamination and liable to play a part in the transmission of disease. The importance of the efforts to safeguard the milk supply against adulteration and unhygienic dangers is further emphasized by the facts in regard to the volume of the industry involved. In 1909, 4,260,324,206 gallons of milk were consumed as such in this country. This represented an estimated value to the producer of $647,569,279, and to the consumer of $1,463,847,397.

Regulations involving the sanitary conditions under which cattle producing milk are kept, as well as the condition of the premises on which milk is produced and handled, began to be enacted as early as 1895. Contemporaneous with the development of this inspection movement was the growing interest in the subject on the part of the medical profession, as exemplified in medical milk commissions. These numbered about seventy-five in 1914. They have been instrumental not only in the production of what is now familiarly known as "certified milk," but also in educational propaganda which has been very effective in improving and appreciating the quality standards of the milk sold in many cities. The subject of pasteurization has been broadly ventilated, and the entire practice put on a rational basis. The question of bovine tuberculosis has been faced in a scientific way. Popular prejudices like those against milk from silage-fed cattle have been modified to fall in line with the best suggestions of animal nutrition, dairy bacteriology, economics and sanitary science. Some of the changes initiated have resulted only after considerable friction between the financial and the hygienic interests concerned. This, however, is not a new experience in the attempts of scientific knowledge to modify current procedures. Inertia is found in all walks of life. The gratifying feature of the modern

1. These and other statistical facts in this editorial are taken from a report of the Fourth Convention of the International Association of Dairy and Milk Inspectors, Experiment Station Record, 1915, xxxiii, 701.

milk industry is that it truly represents the application of scientific investigation. Progress has been based for the most part on study rather than mere empiricism, and the possibilities of popular education in scientific matters have been exemplified in a degree that is both significant and encouraging. To quote a recent writer, success does not flourish under an attitude of antagonism growing out of compulsion, but under one of cooperation. The inspection agencies have thus been a medium of instruction, and the experiment stations in their investigations have had the producer in mind quite as much as the consumer, in order that he might improve his business in producing a better quality of product.

DAKIN'S DISCLAIMER OF NOVELTY IN THE "NEW ANTISEPTIC"

Some time ago THE JOURNAL commented[1] on the alleged discovery of a "new antiseptic," credited to Drs. Carrel and Dakin, which was at that time receiving attention in the medical as well as the lay press. This preparation is produced by the action of sodium carbonate on a solution of chlorinated lime; the resulting fluid, after being siphoned off from the precipitate of calcium carbonate and filtered, is neutralized with boric acid. It was stated that the solution thus produced is essentially the familiar solution of chlorinated soda (Labarraque's solution), the only novelty being the use of boric acid for neutralization. Chlorinated lime and Labarraque's solution are well-known disinfectants, and their use in surgery is not unknown, although both are alkaline and thus destructive of tissues except when applied in highly dilute solutions.

In a recent article,[2] Dr. Dakin notes that the so-called "new antiseptic" was discovered by Berthollet in 1788. Dakin shows by quotations from his original communication to the Académie des sciences that no claim of originality in the method was put forward at the time it was announced by him; the alleged discovery was a newspaper-manufactured sensation. The various counterclaims to priority in the use of this disinfectant are all a waste of ink and paper. "It would seem," says Dakin, "as if the time was fitting for a statement that what we have all been striving for is to find the best means of preparing, preserving and applying the powerful antiseptics, hypochlorites and hypochlorous acid, the main properties of which substances were discovered by distinguished French chemists many generations ago." In this connection Dakin refers to the methods of Lorrain Smith, who aims at a liberation of free hypochlorous acid by the addition to chlorinated lime of an equal weight of boric acid; to that of Lumière, who uses three parts of boric acid to one of chlorinated lime, and to that of Hertz-Boyer and the staff of the French hospital ship *Charles Roux*. The latter have used for surgical dressings a hypochlorite solution prepared by the electrolysis of sea water. Dakin says that, as compared with Lorrain Smith's and Lumière's preparations, his own mixture contains less free hypochlorous acid and a smaller concentration of available chlorin, and that it can therefore be more freely and continuously applied. Delbet and Quénu[3] believe, by the way, that the virtue of sodium hypochlorite solutions as surgical dressings resides largely in the irritant actions on the tissues, and that consequently Dakin's solution is the less effective because of the absence of alkalinity which is its special characteristic.

Dakin points out that the antiseptic action of hypochlorous acid is generally attributed (by others) to its decomposition in the presence of organic matter with the attendant liberation of oxygen. He believes, however, that the antiseptic action is due, not to the liberation of oxygen, but to the formation of chloroimido (> NCl) groups in the protein, and that these in turn may cause the antiseptic action. In either case, however, according to the modern electron conceptions, the reaction would be interpreted as one of oxidation.

Dakin quotes from the *Lancet*[4] the statement that recent results "confirm the conclusions of various investigators that hypochlorous acid is the most powerful antiseptic known." Such a statement, he remarks, unless qualified as to the conditions under which the antiseptic acts, is meaningless. It should be remembered that disinfection is a chemical reaction, and the reagent acts, not only on the bacteria, but also on the medium in which they are found. An antiseptic which shows high relative activity under one set of conditions may show a low one under other conditions. Hence, no just comparison of the relative power of antiseptics can be made except under comparable conditions. The one conclusion which all results appear to justify here is that hypochlorites, whether applied in an acid solution, as by Lorrain Smith and Lumière, in an alkaline solution, as advocated by Delbet and Quénu, or in a neutral solution, as used by Carrel and Dakin, are of genuine value in the treatment of infected wounds.

FEATURES OF PITUITARY FUNCTION

Out of the bewildering mass of data derived in recent years from a diversity of sources in regard to the so-called ductless glands, some order is beginning to assert itself. One by one the functions of the "internal secretions" of what have lately been designated as the endocrine glands — the thyroids, parathyroids, suprarenals, pituitary, etc. — are being unraveled by experimental investigations or clinical observations, or, in favorable instances, by a happy combination of the two methods. Part of the work of progress has

1. The So-Called New Antiseptic, editorial, THE JOURNAL A. M. A., Sept. 4, 1915, p. 880.
2. Dakin, H. D.: The Antiseptic Action of Hypochlorite, Brit. Med. Jour., Dec. 4, 1915, p. 809 > abstr., THE JOURNAL A. M. A., Jan. 8, 1916, p. 150.
3. Paris Letter, THE JOURNAL A. M. A., Dec. 11, 1915, p. 2101.
4. Lancet, London, Aug. 14, 1915, p. 347.

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consisted in casting aside untenable theories and unreliable statistics as well as subjecting the more promising suggestions to rigid scientific tests.

In connection with their extensive experimental studies on the rôle of the pituitary, Cushing and his collaborators have noticed a marked tendency of animals to pass into a profoundly lethargic state after a total or nearly total surgical removal of the glands.[1] When the extirpation is not quite so complete, the symptoms are not quite so severe; and it has been observed that a pronounced lethargy with coincident fall in body temperature is more apt to supervene in the winter months than after similar operations in the warmer seasons. It was ascertained, however, that the fall of temperature is characteristic of the condition, regardless of the temperature of the environment.

The associated symptoms of the experimental states of hypophysial insufficiency were the lethargy, the subnormal temperature, slow pulse and respiration, lowered blood pressure and insensitivity; furthermore, there was a tendency in individuals surviving a considerable though incomplete deprivation of the pituitary gland to become adipose and lose their sexual activity. The latter symptoms have furnished an explanation of the clinical syndrome known as dystrophia adiposogenitalis by coordinating it with hypophysial insufficiency.[2]

The phenomena described bear a striking resemblance to those instances of pronounced natural somnolence which are familiar to us in the case of hibernating animals. The capacity for seasonal lethargy such as is exhibited by the woodchuck, or North American marmot, is evidently acquired in order to adapt the individual to periodic conditions, such as a seasonal diminution of food supply unfavorable to life. Hibernation is apparently not merely the result of exposure to cold. The "winter sleep" is often begun before the rigors of climate set in; it cannot be induced by low temperature alone, and, furthermore, there are species which seem to have a period of summer sleep. The food element is much more likely to be a determining one. Cushing and Goetsch[3] have pointed out that such attempts as have been made to relate these two extracorporeal factors — low external temperature and diminished food supply — to the problem of hibernation under experimental conditions have given results that are not entirely convincing. These investigators at the Peter Bent Brigham Hospital, accordingly, have turned their attention to the ductless glands of hibernating animals and discovered that, during the dormant period, histologic changes are apparent in many of them. In accord with earlier observations by Gemelli,[4] they have observed that the pituitary not only diminishes in size, but the cells of the pars anterior in some animals at least completely lose their characteristic staining reactions to the usual histologic dyes. At the end of the dormant period the gland swells, and as the cells enlarge they again acquire their differential affinity for acid, basic and neutral stains. At the same time, evidences of renewed development may appear in the form of karyokinetic figures. On the basis of such tissue changes, one may readily postulate, during their continuance, a condition of diminished hypophysial activity which could become responsible for the typical sequence of symptoms, including retardation of metabolism, inactivity of the reproductive glands, and somnolence, precisely as they are seen in induced hypopituitarism.

We are reminded by Cushing and Goetsch that the occurrence of such seasonal waves of inactivity on the part of certain members of the ductless gland series is no more remarkable than the periodic waves of inactivity or activity in the case of other glands, such as those concerned with reproduction. Hibernation, according to the Boston investigators, may thus be ascribed to a seasonal physiologic wave of "pluriglandular activity." The essential rôle is perhaps to be ascribed to the pituitary, they suggest, not only for the reason that the most striking histologic changes appear in this structure, but also because deprivation of the secretion of this gland alone of the entire series of ductless glands produces a group of symptoms comparable to those of hibernation. The subject is not without direct human interest, for it is stated that even man appears to have a certain capacity for what may be called winter sleep. This is shown by the experiences of those in the arctic regions, and also among peasants in certain parts of Russia who, during the winter months when there is a scarcity of food, are said to pass weeks at a time in a somnolent state, arousing once a day for a scanty meal.[3] With the tardy performance of the pituitary and the effects of invasion by the hookworm already disclosed, we shall soon be in a position to excuse the lethargy of a variety of human individuals on physiologic rather than temperamental grounds.

1. Crowe, S. J.; Cushing, H., and Homans, J.: Experimental Hypophysectomy, Bull. Johns Hopkins Hosp., 1910, xxi, 127; abstr., THE JOURNAL A. M. A., June 4, 1910, p. 1905.
2. Cushing, H.: The Hypophysis Cerebri: Clinical Aspects of Hyperpituitarism and of Hypopituitarism, THE JOURNAL A. M. A., July 24, 1909, p. 249.
3. Cushing, H., and Goetsch, E.: Jour. Exper. Med., 1915, xxii, 25.
4. Gemelli, A.: Arch. p. le sc. med., 1906, xxx, 341.

CAFFEIN AND ASTHMA

In its general behavior as a nerve stimulant, caffein acts on the medullary centers. As a result, respiratory activity may be markedly accelerated, in part owing to an increased sensitiveness of the respiratory center, and in part, perhaps, because of an increase in the irritablity of the respiratory muscles. "The Pharmacology of Useful Drugs," reprinted from THE JOURNAL,[1] states that "caffein is one of the best respiratory stimulants because the stimulation has little tendency

1. Hatcher, R. A., and Wilbert, M. I.: The Pharmacology of Useful Drugs, Chicago, 1915, p. 49.

to pass into depression even with large doses." In marked cases of depression of the respiratory mechanism, as from alcohol or in morphin narcosis, caffein accordingly forms a splendid antagonistic drug.

Some time ago Pal[2] attempted to establish the truth of the assertion that caffein will overcome artificially induced bronchospasm, which is the counterpart of the familiar condition known as asthma. He explains the alleged effect by the supposition that the drug stimulates certain branches of the sympathetic system peripherally and in this way effects a dilation of the bronchioles and overcomes the bronchospasm. At best the methods of treating asthma are far from satisfactory, so that every new suggestion based on what seems to be rational pharmacology deserves careful investigation.

The most commonly accepted explanation of the contractions of the bronchial musculature seen in asthma nervosum attributes them to an exaggerated reflex excitability of the vagus center for the bronchioles.[3] Atropin and lobelin at present find use in the treatment of asthma when it is sought to paralyze the vagus in the bronchi by the drugs.

Shall caffein be added to the list? Newer experiments in the physiologic institute of the University of Berlin[4] speak clearly against the probability of advantage from this substance. It is true that when an experimental condition of bronchospasm is artificially instituted by the use of suitable drugs like muscarin, a slight transitory remedial or antagonistic effect is obtained from large doses of caffein. This is in no way comparable to the antiasthmatic manifestations of atropin. Moreover, the seat of action of caffein is central, not peripheral, where the objectionable contractile phenomena are actually involved. The caffein, in other words, merely stimulates the respiratory center to increased effort; it does not relieve the bronchospasm directly. At all events, its anticonstrictor effects are too feeble to put caffein into the class of drugs along with the more familiar products adapted to the relief of typical asthmatic symptoms.

2. Pal, J.: Ueber die Wirkung des Kaffeins auf die Bronchien und auf die Atmung: Ein weiterer Beitrag zur Kenntnis des experimentellen Bronchospasmus, Deutsch. med. Wchnschr., 1912, No. 38.

3. Einthoven, W.: Arch. f. d. ges. Physiol., 1892, li, 367. Brodie, T. G., and Dixon, W. E.: Tr. Path. Soc., London, 1903, liv.

4. Weber, E.: Neue Untersuchungen über experimentelle Asthma und die Innervation der Bronchialmuskeln, Arch. f. Physiol., 1914. Meyer, F.: Physiologische Untersuchungen über Kaffein als Asthmamittel, ibid., 1915, p. 1.

Paratyphoid Fever.—L. Giroux reports that during the last few months he had two cases of typhoid in his service; these men had not been vaccinated against typhoid. During this period he also had fifty-seven cases of paratyphoid fever, all in men vaccinated against typhoid, and two in this group developed orchitis and epididymitis at the same time. The genital affection persisted for several weeks, entailing suppuration in one case. The genital complications in one developed at the height of the fever, in the other not until two or three days after defervescence. His report is published in the *Bulletins de la Société médicale des hôpitaux de Paris*, 1915, xxxix, 760.

Current Comment

CLINICAL CLERKS AND SUPERVISION

Much has been written of late in regard to the clinical clerk system in England, and a similar arrangement is being quite generally established in the teaching hospitals in the United States. A careful supervision of such work, however, is highly essential. While in the senior year valuable clinical training can be furnished through a properly conducted clinical clerk system, without adequate supervision such courses may be worse than useless. It is no less important that the work of medical students throughout the four-year course should be carefully supervised than it is that it be carefully graded. It is of particular importance that no student, even in his senior year, should be permitted to visit, examine or prescribe for hospital patients unless that work is supervised by a member of the attending staff, preferably one who is a member of the active teaching faculty of the medical school. Without such careful oversight, experience shows that the clinical clerk system leads to a confusion and irresponsibility which is demoralizing to the student and dangerous to the patient. Not until the student has graduated and entered the hospital as an intern should supervision of his work be relaxed, and even then only partially. The intern year should be the final step in the student's graded and supervised clinical work, after which he may be permitted to assume full responsibility for the care of the sick. If the student's work in clinical diagnosis, in dispensary clinics, in section clinics at the bedside, in his service as a clinical clerk, and in his intern year is so graded as to give the student a gradually increasing knowledge and technic, he could likewise be permitted to assume a gradually increased responsibility for the examination and care of patients. If this is done under the supervision of skilled teachers, the future graduates in medicine in this country will be far better qualified to assume the responsibility of treating the sick than has heretofore been true.

THE TOXICOLOGY OF BENZENE

The best way to dispel any uncertainty regarding the cause of death by foreign substances is to discover the offending invader in the body itself. When a metallic poison like arsenic or a toxic alkaloid like strychnin can actually be isolated from a dead body in quantities sufficient to constitute a fatal dose, no further evidence of the source of harm is ordinarily required. There are poisons, however, which evade detection because they are susceptible to rapid change in the organism, while still other harmful substances may elude identification because of the inadequacy of some of the technical methods at present employed in toxicologic analysis. This appears until lately to have been the case with benzene (benzol) which, though not as yet an important source of danger in this country, is now becoming more conspicuous as a cause of poisoning in man. Benzene, which is a definite chemical compound (C_6H_6) derived from coal tar, must not be

confused with benzin, a mixture of volatile hydrocarbons derived from petroleum. The older textbooks on toxicology have little to say about benzene or the hydrocarbons that commonly accompany it in the industries. A growing source of danger lies in the inhalation of benzene vapors. When benzene is taken by the mouth it appears to be poorly absorbed. A part is said to be excreted by the lungs, and a small fraction may even be oxidized slowly in the body.[1] At the pharmacologic institute of the University of Berlin, Joachimoglu[2] has succeeded in perfecting a method for detecting benzene and measuring the quantity present in animal tissues. By this means, interesting facts regarding the distribution of the poison in the body have now become available. It has been demonstrated that in benzene intoxication the brain and spinal cord contain relatively more of the organic poison than do any other organs. This is without doubt related to the fact that, owing to its solubility in fats and fatlike compounds, benzene has a natural "affinity" for the lipoid of the nervous tissues. The same distribution, for comparable reasons, has been made for chloroform[3] and acetone.[4] Similar findings are also to be expected in the case of toluene (toluol, methyl benzene) which, though chemically closely related to benzene, has less practical importance with respect to the possibilities of industrial poisoning.

THE DETROIT SESSION

While it is probably not necessary to remind the Fellows of the Association that the next annual session will be held in Detroit, June 12-16, attention should be called to the present indications that the attendance at the Scientific Assembly this year will be very large. A big meeting has been prophesied ever since Detroit was named as the place of meeting, and as arrangements have progressed, assurances have multiplied to substantiate this expectation. A year ago, the Scientific Assembly was held on the Pacific Coast; the year before, on the Atlantic Coast at Atlantic City, at which point the Association has held its annual convention six times since it last met in Detroit twenty-four years ago. The place of meeting this year is near to the center of the medical population of the country. It is in a city, seventh in population of the cities of the United States, conveniently located for a visit by rail, boat or automobile. Detroit, claiming as it does, to be the first city in automobile production, naturally has provided good roads. In a word, Detroit itself will attract physicians. Consequently, while the Committee on Arrangements is confident that the hotel accommodations will be ample, it is advisable that those who are planning to attend the annual session this year should follow the suggestion of the Committee on Arrangements[5] and make hotel reservations early, especially if they desire a "room with bath."

1. Nencki, M., and Giacosa, P.: Ueber die Oxydation der aromatischen Kohlenwasserstoffe im Thierkörper, Ztschr. f. physiol. Chem., 1880, iv, 325.
2. Joachimoglu, G.: Ueber den Nachweis des Benzols in Organen und seine Verteilung im Organismus, Biochem. Ztschr., 1915, lxx, 93.
3. Nicloux, M.: Les anesthésiques généraux, Paris, 1908.
4. Archangelsky, C.: Ueber die Verteilung des Chloralhydrats und Acetons im Organismus, Arch. f. exper. Path. u. Pharmakol., 1901, xlv, 347.
5. Association News, THE JOURNAL A. M. A., this issue, p. 445.

INDUSTRIAL INSURANCE

Bills for compulsory health insurance for workers were introduced into the Massachusetts legislature, January 14, and the New York legislature, January 24. These bills, which have been drafted by the American Association for Labor Legislation in cooperation with the special committee appointed by the American Medical Association, will cover any case of sickness or accident not within the scope of the Workmen's Compensation Act, and will apply to manual laborers and to all others earning less than $100 per month. Benefits to insured workers will include medical, surgical and nursing attendance, medicine and surgical supplies, cash benefit for a maximum of twenty-six weeks of the year, and a limited funeral benefit. Local health associations created under the proposed act for the administration of those benefits would be under the joint control of employers and insured employees. The bills as drafted represent the results of a three years' exhaustive study of health insurance by the special committee of the American Association for Labor Legislation. Much of the best informed opinion of the country is in favor of these proposals. The United States Public Health Service, various state departments of health, labor leaders and others strongly advocate health insurance. The introduction of these bills marks the inauguration of a great movement which ought to result in an improvement in the health of the industrial population and improve the conditions for medical service among the wage earners. It is the duty and the privilege of every physician to study this important question and to express his opinions either to the committee appointed by this Association or to the American Association for Labor Legislation.

THE VALUE OF ESTIMATIONS OF CREATININ IN THE BLOOD

The recent development of methods for the determination of renal functioning has been so extensive that clinicians may almost be said to face embarrassment in preferring one procedure to another. The earliest plan for ascertaining the degree of kidney efficiency consisted in determining in the urine the extent of excretion of various substances such as lactose, iodids, creatinin and phenolsulphonephthalein. Lately the complementary method of searching in the blood for the possible retention of waste products which should normally be eliminated promptly has become popular, owing to the perfection of simple and relatively accurate micro methods for the estimation of urea, uric acid and other forms of nonprotein nitrogenous blood constituents. Obviously it would be inadvisable to direct attention to substances, like sugar, which may undergo an augmentation in the blood as the result of endogenous contributions rather than because of altered renal efficiency. The more any of the excreted substances or blood components are likely to be subject to the influence of the varying food factor or tissue disturbances the less are they specifically adapted to serve as indexes of renal function alone. Nephritis with retention is accompanied not only by an accumulation of urea in the body, but also by other

nitrogenous waste products, notably urates and creatinin. Myers and Lough[1] of the New York Post-Graduate Medical School have lately directed attention to the special value of the estimation of creatinin in the blood as a diagnostic aid in the study of nephritis. They intimate that practically in this disease alone are high values for creatinin encountered. Thus in gout with its retention of uric acid in the blood there appears to be no appreciable retention of creatinin. In view of these facts and the relatively easy method for estimating the compound colorimetrically in a small volume of blood, the subject deserves prominent notice. The marked retention of creatinin in the blood in uremia has been noted independently by several groups of investigators, so that there is little doubt that the permeability of the kidney to this compound may be decidedly decreased in nephritis. According to Myers and Lough, the creatinin rises above 2.5 mg. per hundred c.c. of blood almost without exception only in cases of renal involvement. Creatinin values from 2.5 to 3 mg. may be viewed with suspicion; figures from 3 to 5 mg. are to be regarded as unfavorable, while more than 5 mg. probably indicates an early fatal termination.

1. Myers, V. C., and Lough, W. G.: The Creatinin of the Blood in Nephritis: Its Diagnostic Value, Arch. Int. Med., October, 1915, p. 536.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Personal.—Dr. and Mrs. David Troy Cheairs, Tillar, will remain until March 6 in New Orleans where Dr. Cheairs is doing postgraduate work.——Drs. Robert E. Rowland, Eldorado, and Patrick Murphy, Little Rock, have been appointed assistant physicians at the State Hospital, succeeding Drs. Delparde W. Roberts and Charles R. Doyne, resigned.——In a fire which destroyed the S. P. Thompson Block, Marked Tree, the office of Dr. George E. Paullus was destroyed with a loss of $1,500, partially covered by insurance.

CALIFORNIA

State Board Election.—At the annual meeting of the State Board of Medical Examiners in Sacramento, January 11, Dr. William R. Molony, Los Angeles, was elected president; Dr. Arthur M. Smith, Oakland, vice president; and Dr. Charles B. Pinkham, Sacramento and San Francisco, secretary-treasurer.

Lane Lecture.—The thirty-fourth course of medical lectures under the direction of Leland Stanford Junior Medical School, at Lane Hall, San Francisco, was opened January 14 by Dr. George H. Whipple, San Francisco, a director of the Hooper Foundation for Medical Research, who spoke on "Medical Research and Its Relation to General Medicine."

Personal.—Drs. Cornelius Van Zwaluwenburg and William W. Roblee, both of Riverside, have taken new and larger quarters in the Glenwood Block and they will have associated with them a pathologist and laboratory man.——Dr. William S. Porter, Oakland, returned from Australia, January 18. He had been detained in that country for several weeks until he could establish his American citizenship.

Doctor Graham Not Dead.—In the issue of THE JOURNAL of October 2, among the obituary notices appeared that of Dr. Lorne Benjamin Graham of Pacific Grove, who it was reported had been killed in the Aegean Sea, August 17, when a transport on which he was going to the Dardanelles was sunk by a German submarine. Further inquiry has elicited the information from the chief surgeon of the expeditionary forces in the Dardanelles that Dr. Graham is in good health, and is now serving as temporary lieutenant in the Royal Army Medical Corps and is attached to the Thirty-Third Field Ambulance, M. E. F., at present stationed at Mudros.

Contemplated Improvements at the University of California Medical School.—The University of California Medical School is said to be receiving rapid development at the hands of the university. The expenditure of the university for medical instruction last year is reported at $87,345, and $74,876 was spent for the maintenance of the teaching hospital, making a total spent by the university for medical work of $162,221. It is expected that a new 216-bed teaching hospital will be completed by next summer, at a cost, met by private gift, of $615,000. The regents of the University of California have announced a program of expansion in the immediate future. This plan calls for a new building to house the departments of anatomy and pathology, to cost $150,000; an out-patient building, to cost $100,000; a nurses' home with accommodations for 100 nurses, to cost $100,000; alterations for the present hospital building, soon to be vacated, to fit it for use for physiology and physiologic chemistry, at a cost of $30,000; alterations of the western building to provide for administrative offices, medical library, etc., and the erection of a central heating and power plant.

Public Lectures.—The University of California has announced a series of Saturday morning lectures, open to the general public, on the problems of tropical medicine, a field of work to which particular attention is being paid by members of the staff of the Hooper Foundation for Medical Research of the University of California. The coming lectures at the University of California Hospital in San Francisco will be as follows:

February 5—Dr. K. F. Meyer, Associate Professor of Tropical Medicine, of the Hooper Foundation for Medical Research, "Trypanosomiases," with demonstration of living organisms.
February 12—Professor Walker, "Malaria in California," with a demonstration of material.
February 19—Dr. H. C. Moffit, Professor of Medicine and Dean of the University of California Medical School, "Clinical Aspects of Malaria in California."
February 26—Dr. K. F. Meyer, "Piroplasmiases," with demonstrations.
March 4—Dr. H. F. Nichols, "Spirochaetiases."
March 11—Dr. Frank Billings, "The More Important Helminthiases."
March 18—Dr. K. F. Meyer, "Yellow Fever, Dengue, and Pappataci."
March 25—Dr. K. F. Meyer, "Typhus, Spotted Fever and Verruga Peruviana."
April 1—Dr. Howard Morrow, Clinical Professor of Dermatology, "Leprosy and Tropical Skin Diseases."
April 8—Dr. Frank Billings, "Beriberi and Pellagra," with demonstrations.
April 15—Dr. E. L. Walker, "Parasitic Insects and the Rôle of Insects in the Transmission of Tropical Diseases."
April 22—Dr. K. F. Meyer, "Tropical Hygiene and Sanitation—Summary of the Present-Day Achievements."

COLORADO

Clinical Society Organized.—The Pueblo County Clinical and Pathological Society was organized recently in Pueblo, and the following officers were elected: president, Dr. Crum Epler; vice president, Dr. Elmer A. Elder; and secretary-treasurer, Dr. David E. Hoag.

Medical Reserve Corps Division Organized.—The Association of the Medical Reserve Corps, U. S. Army, Colorado State Division, was recently organized in Denver, and the following officers were elected: president, Lieut. Charles A. Powers; vice president, Lieut. Thomas E. Carmody; secretary, Lieut. William C. K. Berlin; and treasurer, Lieut. Cuthbert Powell, all of Denver.

Personal.—Dr. William H. Bergtold has been elected president; Dr. Charles B. Lyman, vice president; and Dr. Robert L. Charles, secretary, of the staff of St. Joseph's Hospital, Denver.——Dr. William A. Jolley, Boulder, has returned after war service in Serbia.——Dr. Walter S. Merritt, superintendent of the Beth-El Hospital, Colorado Springs, has declined the invitation of the Iowa Methodist Hospital, Des Moines, to become its head.

New Quarters for Medical Society.—Arrangements have been made by which the medical society will soon have new and commodious quarters for its meeting hall and library. A new building is to be erected adjoining the Metropolitan Building, which is now used exclusively by doctors and dentists, and connected with it by an archway. The whole of the ground floor of the new building will be occupied by the

society for its library, office and meeting hall with a seating capacity of 250. The space devoted to the library will be ample not only for all present needs, but for the natural expansion of the future.

CONNECTICUT

Personal.—Dr. Joseph E. Harris, New Haven, has been appointed assistant physician of the Ohio State Sanatorium, Mount Vernon.——Dr. John T. Black, health officer of New London, has been elected secretary of the State Board of Health to succeed Dr. Joseph H. Townsend, New Haven, deceased.

New Officers for New Haven Society.—At the annual meeting of the New Haven Medical Association, January 19, the following officers were elected: president, Dr. Frederick Bellosa; vice presidents, Drs. John F. Luby and Eugene M. Blake; secretary, Dr. Charles E. Sanford, and treasurer, Dr. Thomas V. Hynes.

ILLINOIS

Protest Against Removal of Water Commissioner.—Physicians of Rock Island at a called meeting appointed a committee to draft resolutions protesting against the proposed removal of R. W. Sharp as superintendent of the city water works, and commending the efficient management of the water department.

County Society Entertained at Army Post.—The regular monthly meeting of the Lake County Medical Society was held at Fort Sheridan January 13. The guests were shown through the post, including the post hospital, and dinner was served, after which there were clinical demonstrations and case reports by medical officers of the post; a talk on preparedness by the commanding officer and one by Major Tompkins on "Life Among the Indians."

Personal.—Dr. Gilbert Langdon Bailey, Oak Park, has purchased the estate known as the Higgenbotham farm about two miles from Lexington, Ky., on the Newtown pike. Dr. Bailey expects to take possession of his farm March 1.——It is stated that Dr. Emmett A. Garrett will be appointed commissioner of public health of the city of Peoria to succeed the late Dr. Edward Hasson.——Dr. William Jayne, Springfield, fell on a slippery sidewalk, January 19, injuring his left hip.——Dr. George L. Apfelbach, director of the Occupational Disease Clinic of the Illinois Department of Factory Inspection, delivered an illustrated lecture on "Occupational Hygiene," in the auditorium of the Chicago Turngemeinde, January 19.——Dr. George P. Gill, Rockford, who served for six months with the Chicago unit in British war hospitals, expects to return in February after making a tour of Switzerland and Italy.——Dr. Beattrice C. Opre, Victoria, while visiting patients January 8 was seriously injured by her horse slipping and falling on her.

Chicago

Local Nurses Sail for War Service.—Thirty-five more nurses from the Mercy Hospital sailed from New York February 2 for England to minister to the wounded soldiers of the Allies. Miss Mabel Adamson is in charge of the party.

Personal.—Dr. Henrietta M. Farquharson was knocked down by a wagon January 26 and sustained serious contusions and lacerations.——Dr. Charles F. Yerger, attending physician at the Juvenile Detention Home, suffered concussion of the brain from an accidental blow on the head January 25.

Freudenthal to Speak in Chicago.—Dr. Wolff Freudenthal, president of the German Medical Society, New York City, will address the German Medical Society, Chicago, by invitation on February 17 on "The Direct Galvanization and Faradization of the Bronchi and Their Topical Medicinal Treatment in Bronchial Asthma."

Institute of Medicine Meeting.—At the meeting of the Institute of Medicine of Chicago January 28, "The Glands of Internal Secretions" was the subject for discussion. The speakers were Prof. Robert R. Bensley of the University of Chicago; Prof. R. G. Hoskins of the Northwestern University Medical School, and Dr. Joseph L. Miller. Dr. Dean D. Lewis led the discussion.

Cosmetic Surgery.—A Chicago branch of the American National Committee for the foundation of special American hospitals in Paris for wounds of the face and jaw has been appointed. About $100,000 will be required for this purpose, of which $30,000 has so far been secured and the American Red Cross agrees to donate $2,000 for every $18,000 raised by subscription. The committee consists of Drs. Truman W. Brophy, chairman, and L. L. Davis and George West.

Girl Falls Two Hundred Feet and Lives.—A young woman fell last week from the sixteenth floor of the Transportation Building, more than 200 feet, head first, alighting, fortunately for her, in an automobile truck filled with paper boxes. She sustained a compound comminuted fracture of the right humerus near the surgical neck and a deep scalp wound of the forehead. At present she is a patient in St. Luke's Hospital, and is practically out of danger from a surgical standpoint.

Tuberculosis Institute Meeting.—The tenth annual meeting of the Chicago Tuberculosis Institute was held at the City Club January 28. The three vacancies on the board were filled by Mrs. C. B. Moore, Mrs. Arthur Aldis and Rev. Francis Kelley. Dr. Theodore B. Sachs, the president, reported that while in 1906 there were only 300 tuberculosis beds in the city and county and only 180 tuberculosis institutes in the United States, today there are 1,980 beds for tuberculosis patients in Chicago and 600 sanatoriums and hospitals in the United States with a total capacity of about 35,000 beds.

Scarlet Fever.—The sum of $7,500 was set apart by the city council finance committee January 21 to provide hospital accommodations for patients suffering from scarlet fever and unable to pay for treatment. Owing to the crowded condition of the county hospital, the patients cannot be received. The city's contagious disease hospital is not yet completed and the grant of funds was an emergency measure. According to the figures of the health department the number of scarlet fever cases in the last five months were as follows: December, 579; November, 589; October, 209; September, 98, and August, 90.

The Educational Propaganda.—At the annual meeting of the clinic for infant feeding held January 29 in Grace Parish Church, Dr. Frank S. Churchill, who is at the head of infant welfare work in Chicago, delivered an address.——At the annual meeting of the Women's City Club Dr. A. L. Lindsay Wynekoop of the Child Welfare Committee, and Dr. Rachelle S. Yarros of the Social Hygiene Committee, made reports and discussed the city budget.——Secretary E. R. Pritchard of the Chicago Board of Health spoke at a meeting of the John Fiske Parents'-Teachers' Association January 21 on "Community Work for Community Good."

INDIANA

Approves Sanatorium.—The Marion County Council agreed to allow $80,000 for a county tuberculosis sanatorium. This is $20,000 less than was requested.

New Officers of State Board.—The State Board of Medical Registration and Examination at its meeting, January 11, elected the following officers: president, Dr. James M. Dinnen, Fort Wayne; vice presidents, Drs. William A. Spurgeon, Muncie, and William T. Gott, Crawfordsville; secretary-treasurer, Dr. Moses S. Canfield, Frankfort.

Dinner to Physicians.—Physicians of Lafayette and some of the members of the faculty of Purdue University, Lafayette, were the guests of the Sisters of St. Francis, January 13, at the twenty-fifth annual banquet given at St. Elizabeth's Hospital. Dr. George F. Beasley officiated as toastmaster and at the conclusion of the dinner short talks were made by several of the guests.

The Recent Intestinal Epidemic.—An investigation of the recent illness in Indianapolis in which gastro-intestinal symptoms were the most prominent, has shown that gas-forming bacteria were discovered in forty-one out of sixty-two samples of city water. The water company has now put in check valves so that an epidemic of this kind may not be possible again.

Personal.—Dr. Carleton B. McCulloch, Indianapolis, has been appointed a delegate from Indianapolis to the National Security League.——Dr. Percy E. McCown, Indianapolis, is spending several months in the East in postgraduate work.——Dr. Earle S. Green, Muncie, has been commissioned Major, Medical Corps, Ind. N. G.——Dr. James H. Moroney, Winchester, has returned after several months in Louisiana.——Dr. Milton A. Tremain, Adams, fractured his right arm by the backfiring of his automobile, January 24.——Dr. Henry B. Shacklett, New Albany, has been appointed president of the Floyd County Antituberculosis League.——Dr. Frederick M. Aitken, Bristol, is ill with influenza in the General Hospital, Elkhart.——Dr. Jesse L. McElroy has been appointed physician to the Indianapolis City Dispensary, succeeding Dr. Frederick E. Jackson, Indianapolis, resigned.

Judgment in Favor of Physician Affirmed.—The supreme court has affirmed the Marion Superior Court in giving Dr. John R. Newcomb, Indianapolis, a judgment for $371 against the Indiana Die Casting Development Company for services rendered one of its injured workmen. The company defended the action on the ground that Dr. Newcomb was employed by the superintendent of the company who had not been empowered to employ a physician for the care of injured workmen. The supreme court quotes with approval the following: "The rule that the board of directors must act as a body or a unit is not ironclad. It has already been seen that a by-law may be created by custom or usage. For the simple reason the board of directors may, by acting separately in an individual capacity, establish a custom or usage that will be binding on them and on the corporation. . . . So the separate assent of a majority of the directors to the employment of a physician to attend an injured employe of the corporation, where a majority of them, including the officers, actively participate in the employment and counseled with him concerning the care and treatment of the patient, was held sufficient to make such employment binding on the corporation." The court says that the actions of the superintendent and directors were such that Dr. Newcomb is entitled to recover for his services.

MICHIGAN

Convictions.—It is reported that Dr. S. Clay Todd, Grand Rapids, was convicted in the Superior Court, January 12, of illegal advertising of his medical business.——It is reported that J. Alton Watson, a neuropath of Grand Rapids, was convicted recently of practicing medicine without a license.

Army Surgeon at Ann Arbor.—Col. Louis A. LaGarde, M.C., U. S. Army, will deliver the annual Founders' Day address of the Medical School of the University of Michigan, Ann Arbor, February 22. The topic will be "The Dum Dum Myth." Colonel LaGarde will reach Ann Arbor February 18 and will deliver two lectures a day on military surgery to the medical students, closing the series on Founders' Day.

Personal.—Dr. Frederick C. Warnshuis, Grand Rapids, on January 15 was appointed chief surgeon of the Pere Marquette Railroad Company with office at Grand Rapids. ——Dr. Julius H. Eddy, Wakefield, has retired after twenty-eight years' practice in that place. He has disposed of his property including his hospital to Drs. Henry A. Tressel and Robert J. C. Prout and will leave in February for California.——Dr. Alvin H. Rockwell, for seven years health officer of Kalamazoo, has resigned.

MISSISSIPPI

State Health Officers Meet.—The third annual meeting of the Mississippi Public Health Association was held in Jackson, January 25 and 26, under the presidency of Dr. Waller S. Leathers, University and Oxford, state health officer.

Tuberculosis Sanatorium Legislation.—A bill has been introduced in the state legislature which provides for the establishment of a tuberculosis sanatorium. The bill also provides that sanatoriums may be established by counties in various parts of the state.

Endorse Health Measures.—The Hinds-Rankin Medical Society at a meeting at Jackson, January 12, endorsed a number of measures to be passed on by the legislature. Among these were bills for the establishment of an institution for the feebleminded, to require midwives and physicians to employ measures prophylactic of blindness, to appropriate $30,000 for the campaign against pellagra. The society also instructed its secretary to inform Secretary of the Treasury McAdoo of the society's approval of the proposal to spend $100,000 to carry on the fight against pellagra in the South.

State Board of Health Appointments.—The governor on January 21 announced the appointment of the following members of the State Board of Health: first district, Dr. Luther L. McDougal, Booneville; second district, Dr. J. Harvey McNeill, Olive Branch; third district, Dr. W. W. Hall, Jr., Ruleville; fourth district, Dr. Charles D. Mitchell, Pontotoc; sixth district, Dr. Harvey F. Garrison, Seminary; seventh district, Dr. B. Lampton Crawford, Tylertown; eighth district, Dr. Jacob D. Gilleylen, Jackson. These appointees, together with the five appointees of the Mississippi State Medical Association named at the annual meeting last May, Drs. John H. Johnson, Brookhaven; Thomas H. Seay, Laurel; S. Wade Glass, Lyon; Samuel E. Eason, New Albany; and Thomas F. Elkin, Tupelo, met at the state capitol, Jackson, January 25, for organization and to elect officers.

MISSOURI

Higher Entrance Standard.—An official communication received from the St. Louis University School of Medicine, states that two years of college work will be required for admission to that institution on and after Nov. 1, 1917.

Personal.—Dr. Albert L. Gray, staff obstetrician for the Social Welfare Board of St. Joseph for two years, has resigned.——Dr. William T. Fitzsimons, Kansas City, has returned after war service in Europe.——Dr. Clarence J. Laws has leased the Princeton Sanatorium from Dr. B. S. Powell.——Dr. John A. Malley, Monroe City, has been appointed surgeon of the Wabash System with territory extending from Moberly to Hannibal.——Dr. Murray C. Stone has been appointed pathologist and bacteriologist of the Springfield Hospital.

Prevention of Malaria.—The Department of Preventive Medicine of the University of Missouri has prepared for distribution *Medical Bulletin 28* on the "Prevention of Malaria." The pamphlet gives the history of malaria, theories concerning its causation, and a record of the discovery of the parasite and the relation of the mosquito to the spread of the disease, with a description of the disease-carrying insect and an outline of methods of prevention and treatment. It is said that 1,500,000 people in the United States suffer from malaria every year, and that it causes annually 12,000 deaths. If each life were valued at $5,000 the loss from this cause would be $60,000,000, to say nothing of the enormous value of time lost by and money expended for the treatment of those who do not die. As it is a preventable disease, its continued prevalence is a reproach to the people, and its eradication would be a good money investment. In this connection the university announces that a bureau of information has been established in connection with the Department of Preventive Medicine, with a laboratory, to make free the necessary examinations in the prevention of malaria and other diseases.

St. Louis

Department of Hygiene.—At the last meeting of the St. Louis Medical Society a resolution was adopted commending the action of the board of education in maintaining a department of hygiene, and expressing its disapproval of any action that would deprive the public schools of the city of the valuable services of this department.

Licenses Revoked.—The *Weekly Bulletin* of the St. Louis Medical Society for January 27 announces that the State Board of Health has revoked the license of Dr. Harry L. Fichtenkam on the charge of having agreed to perform an abortion, and the licenses of Drs. William C. (Baldy) Pierce and Gustav Wieland, for using the mails in a scheme to defraud, and that of Dr. Paul N. Fain, who had been convicted in the federal court of using the mails in a scheme to defraud and fined $200.

NEBRASKA

Scarlet Fever in Omaha.—At the meeting of the Douglas County Medical Society in Omaha, January 25, full publicity regarding the present epidemic of scarlet fever in the city and wide circulation of information were urged by the members.

Personal.—Dr. Robert H. Foster, assistant physician at the State Hospital, Norfolk, desires physicians of the state who have knowledge of cases of epilepsy in Nebraska to write to him.——Dr. William S. Fast, superintendent of the Beatrice Institute for the Feebleminded, has been appointed superintendent of the Hastings State Hospital, succeeding Dr. Mark W. Baxter, Ingleside, resigned.——Dr. George J. VanVechten, superintendent of health of Hastings, has recovered from an attack of influenza and resumed practice.

NEW YORK

Lives Saved in the State.—The figures made public by the State Department of Health show that outside of New York City there were 4,500 fewer deaths than in the same area in 1913. The total number of deaths in the state for the year was 145,552, and the proportionate rates for 1915, 1914 and 1913 were 14.9, 15.2 and 15.8 per thousand.

Personal.—To settle the question of the legality of the appointment of Dr. Alva G. Dunbar, Richland, as superintendent of the Oswego County Tuberculosis Hospital, a bill

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has been introduced in both houses of the legislature legalizing his appointment by the board of managers. Under this bill Dr. Dunbar's appointment is to have the same force and effect as though he had had three years of actual practice in his profession.——Dr. Cornelius F. McCarthy, Batavia, who has been ill in Buffalo for four months, has recovered and will practice in Auburn.——Heads of the various bureaus of the Buffalo Department of Health sent Health Commissioner Francis E. Fronczak a letter of congratulation on his reappointment as health commissioner.

New York Association for Improving the Condition of the Poor.—The seventy-second annual report of the above association which covers the year ending Sept. 30, 1915, shows that the total sum expended in its activities was $789,830, an increase of $200,000 over the expenditures of any previous year. The relief department alone cared for 12,000 families, 3,000 more than the figures for any other year. These families comprised 54,000 persons; 33,170 days of country care were given to 1,990 convalescent persons; 42,228 days of fresh air outings at the beach were given to 17,860 mothers and children; 71,462 days of care and treatment were given to 330 persons, of whom 248 were tuberculous, at the association's Home Hospital; 426 widows were given pensions by which they were enabled to care for their 1,363 children, and 413 deserted wives with 1,474 little children were given assistance. The Home Hospital experiment went through its third year. During the course of the experiment 89 families have been admitted to the hospital, comprising a total of 448 persons, of whom 196 were positive tuberculous cases, 121 were suspects and 131 nonpatients; 16 were dismissed for various causes; 19 wage-earner patients were discharged as needing no further treatment; the average residence of the discharged families was 383 days. Isolation of the infected members of the families has been so well carried out in the experiment that during the three years no well member of a family has shown any evidence of having become infected. No new methods of treatment were employed, the routine being the general hygienic-dietetic treatment employed in the leading sanatoriums and hospitals.

New York City

Harvey Society Lecture.—The sixth lecture of the Harvey Society series delivered at the New York Academy of Medicine, February 5, was by Dr. Hideyo Noguchi of the Rockefeller Institute for Medical Research on "Spirochetes."

Epidemic of Influenza on the Wane.—For the week ended January 22, 501 deaths were reported as caused by influenza, bronchitis and pneumonia, 209 more than were reported for the corresponding week of last year, but 58 less than for the preceding week of this year. This seems to indicate that the epidemic of grip and pneumonia are definitely on the wane.

Fire Prevention.—At the request of the fire commissioner, the board of aldermen have enacted a city ordinance providing that no person shall throw away any lighted match, cigar or cigarette within any building or structure or in any boat, car or other vehicle for the common carriage of passengers unless it be to deposit the same in suitable container of metal or other noncombustible material provided for the reception thereof. It is stated that aside from the large financial loss due to fire during the past year, 85 persons have lost their lives as the result of conflagrations in this city.

Antivaccination Law.—The Kings County Medical Society in adopting the yearly reports of its committees for the year 1915 recently put itself on record as characterizing the antivaccination law enacted by the last legislature as "one of the most ignorantly mistaken acts ever legalized, a lamentable satire on preventive medicine." It is said an epidemic of smallpox at New Rochelle proved this to be the case. This law was approved by the state health commissioner as a compromise measure, and provides that communities may determine vaccination in cities of certain classes only in the presence of an epidemic. The law previously provided for compulsory vaccination throughout the state.

Personal.—Dr. Phoebus A. Levene, director of the chemical laboratory of the Rockefeller Institute for Medical Research, has been elected an ordinary member of the Royal Upsala Scientific Society in recognition of his scientific activities. ——Dr. Otto Schoebl has tendered his resignation as assistant director of the quarantine laboratory, port of New York, health officers' department, to accept a position in the Bureau of Science, Manila, P. I.——Dr. Albert C. Perveil, Brooklyn, is reported to be critically ill with sleeping sickness contracted in Central Africa.——Dr. John A. Ferguson, Brooklyn, is said to be seriously ill with pneumonia.——Dr. Allen G. Terrell, Riverhead, has succeeded Dr. Foster Thayer as medical director of the Mutual Benefit Association.

Activities of Public Health Committee.—The Public Health Committee of the New York Academy of Medicine has recently presented a report of its various activities during the year 1915. A summary of this report shows that they have interested themselves in investigating many matters relating to public health and better living conditions and that their influence is felt in practically every matter which has a bearing on public health. Among the subjects which they have considered on which they have expressed an opinion are the following: Teacher mothers in public schools; children's pavilion at the Metropolitan Hospital; eye defects in public schoolchildren; vaccination; certified milk; necropsies; convalescent care of children suffering from heart disease; the problem of drug addiction; homes for the aged; control of quarantine station; health legislation; street cleaning; American Museum of Safety; municipal civil service; sewage disposal into Lake Mohansic; state policy for dealing with mental deficiency; the city budget, and health insurance.

Free Lectures.—The Public Health Education Committee of the Medical Society of the County of New York, in cooperation with the New York Academy of Medicine, will give a course of free public lectures on the prevention of disease, on alternate Tuesday evenings and Thursday afternoons, February 1 to March 23. The program is as follows:

Nerves in Order Versus Nerves in Disorder, Tuesday, February 1, 8:15 p. m.: Nerves Out of Tune, Thaddeus Hoyt Ames, M.D. Self Control, Mary Sutton Macy, M.D. Nerves of the Surgeon, Family, Nurse and Doctor, William S. Bainbridge, M.D.

Childhood Conditions, Thursday, February 10, 3:30 p. m.: Constipation, Abraham Jacobi, M.D. Milk for the Baby at Home, Godfrey R. Pisek, M.D.

Exposé of the Patent Medicine Game, Tuesday, February 15, 8:15 p. m.: Humbuggery of Patent Medicines, Oscar M. Leiser, M.D. The Quack and His Methods, John Van Doren Young, M.D.

Rapid Advancement of Health Measures in the Industries, Thursday, February 24, 3:30 p. m.: Medical Supervision of the Dangerous Trades, Louis I. Harris, M.D. Industrial Hygiene and Occupational Diseases, Lillian Erskine. Industrial Diseases in New York — Their Study and Prevention, W. Gilman Thompson, M.D.

The Most Important Inherited and Acquired Evil, Tuesday, February 29, 8:15 p. m.: Inherited, Daisy M. O. Robinson, M.D. Acquired, John A. Fordyce, M.D. Insanity as a Result, Pearce Bailey, M.D.

What the Medical Laboratory Work Does for the People, Thursday, March 9, 3:30 p. m.: In Investigation, Louise Pearce, M.D. In Diagnosis, Matthias Nicoll, Jr., M.D. In Treatment, William H. Park, M.D.

Better Eyes and the Prevention of Blindness, Tuesday, March 14, 8:15 p. m.: Prevention of Eye Diseases in the New-Born Baby, Henry P. De Forest, M.D. Care of the Eyes in Everyday Life, Walter B. Weidler, M.D. Protection of the Public by U. S. Quarantine, Mary Wakefield, M.D.

Woman's Health in Relation to Her Own Field, Thursday, March 23, 3:30 p. m.: Prenatal Care of Mother, Mary Lee Edward, M.D. Constipation, Rosalie S. Morton, M.D. Cancer in Some of Its Aspects, Howard Canning Taylor, M.D.

OHIO

Dean Means Resigns.—Dr. William J. Means, one of the organizers of the Ohio State University and dean of the Starling-Ohio Medical University ever since the merger in 1907, has resigned to take effect June 30, on account of impaired health and age.

Civil Service Examiners.—The State Civil Service Commission announced on January 15 the appointment of Drs. William J. Means, Herbert M. Platter and Edward C. Buck, all of Columbus, to prepare the questions and have charge of the examinations of candidates for the position of chief medical examiner with the State Industrial Commission.

Personal.—Dr. Walter H. Rieger, Cleveland, has spent six months at Harvard University in graduate work.——Dr. Arthur Pancake, Springfield, was thrown from his automobile in a collision with freight cars at a grade crossing. ——Dr. Harry H. Snively, Columbus, has returned after a year in the Red Cross service in Russia and Persia.——Dr. Sylvester R. Best, Centerburg, vital statistician in the State Bureau of Vital Statistics, was operated on at Grant Hospital, Columbus, January 9, for the removal of gallstones.—— Dr. George Stockton, Columbus, who fractured his leg several weeks ago, is convalescent and has resumed practice.

Harrison Law Constitutional.—In upholding the constitutionality of the Harrison Narcotic Law in the United States District Court for the Northern District of Ohio, Judge Killits said: "The indiscriminate and unrestrained use of opium, coca and their derivatives, is well known to be a great evil, gravely affecting the general welfare of the country. These

are exclusively foreign products, and it is entirely within the power of Congress, in the interest of the general welfare, to exclude their importation entirely, or so to regulate the traffic in them in this country that their importation may be traced."

Medical Societies Merge.—The differences which have existed among physicians of Muskingum County for some time and which resulted in the forming of two societies, the Muskingum County Medical Society and the Academy of Medicine, were finally ended at a meeting in Zanesville, January 26, by the members of the county society accepting the invitation of the Academy of Medicine to affiliate with that body. The transfer was sanctioned by the council of the Ohio State Medical Association, the names of the members were certified to the Academy for membership and the funds were turned over to the Academy treasury. The officers of the merged societies are as follows: president, Dr. Edgar M. Brown; vice president, Dr. Leroy F. Long, and secretary, Dr. Edmund R. Brush.

Cincinnati

Chair of Medicine Inaugurated.—The exercises attending the inauguration of the Frederick Forchheimer chair of medicine and the installation of Dr. Roger Sylvester Morris into that chair were held at McMicken Hall, University of Cincinnati, January 28.

Public Health Officials Speak.—P. A. Surg. W. H. Frost, U. S. P. H. S., gave an illustrated lecture, January 12, at the University of Cincinnati before the Cincinnati section of the American Chemical Society, on "Pollution of the Ohio River."——Surg. Dana Elihu Robinson, U. S. P. H. S., as the result of investigations occupying more than eighteen months, discussed "Economic and Racial Factors Affecting the Health of Cincinnati," before the City Club, January 8.

Personal.—Dr. Albert H. Freiberg has been delegated to represent the Cincinnati Academy of Medicine at the medical defense committee of the Ohio State Medical Association. ——Drs. John W. Murphy and Martin H. Urner have leased the entire twenty-seventh floor of the Union Central Building and will occupy this space as offices and as a hospital for eye, ear, nose and throat patients.——Dr. Arthur C. Bachmeyer, superintendent of the Cincinnati General Hospital, has been elected chairman of the Association of Hospital Chiefs of Cincinnati.——Dr. Christian R. Holmes is said to be slated for the position of supervising director of the Cincinnati General Hospital.

OKLAHOMA

District Association Meeting.—The Central Oklahoma Medical Association met in Enid, January 11, and elected the following officers: president, Dr. Lee W. Cotton, Enid; vice presidents, Drs. Lauren H. Buxton, Oklahoma City, and Harry F. Vandiver, Lahoma; secretary-treasurer, Dr. Leigh F. Watson, Oklahoma City. The next meeting will be held in Oklahoma City, April 11.

PENNSYLVANIA

Abington Plans Elkins Memorial.—The residents of Abington Township have been asked to contribute a dollar each to purchase a memorial to George W. Elkins to be placed in the corridor of the Abington Memorial Hospital which was constructed and endowed by Mr. Elkins.

Personal.—Dr. George H. Widder has been reelected president of the Harrisburg Board of Health, and Dr. George F. Moffit, city bacteriologist of Harrisburg.——Dr. Edward S. Dickey, Pittsburgh, intends going to Russia to do Red Cross work.——Dr. Mary A. Naylor, Pittsburgh, has been appointed by the board of public education of that city as medical examiner of teachers applying for retirement.

To Enforce College Quarantine.—State Health Commissioner Dixon has notified the local health authorities in the homes of students who hurried away when scarlet fever broke out in Washington and Jefferson College, to keep such students under observation for ten days before allowing them to leave their homes. Some of them lived in other states. This plan will be followed for those residing in Pennsylvania. Deputies have been detailed to go to Washington to help enforce the quarantine. All classes were abandoned on January 20, and none will be held until February 7.

Industrial Hygiene Conferences.—The Division of Industrial Hygiene and Engineering of the Pennsylvania Department of Labor and Industry is contemplating a series of conferences for the promotion of industrial hygiene in the industries of Pennsylvania. The first conference, at which the subject of lead poisoning will be discussed, will be held at the state capitol, Harrisburg, February 17. Any physicians desiring more detailed information as to the scope of these conferences can obtain the same by addressing Dr. Francis D. Patterson, Department of Labor and Industry, Harrisburg.

Philadelphia

Personal.—Dr. Leon F. Luburg, district surgeon of a police station, was on January 15 placed in command of all his district surgeons at fires where two or more box alarms are sent out and in case of the absence of Dr. Hubley R. Owen, chief of the bureau.——Following a protest made by the Civil Service Reform Association, Drs. William K. Muller, medical examiner of the Civil Service Commission, and Dr. J. Clinton Foltz, assistant medical examiner, are still retained in the service of the city.——Dr. J. William White, who has been ill at the University Hospital, has returned to his home much improved.——Dr. Ross V. Patterson has been appointed visiting physician at the Philadelphia General Hospital, succeeding the late Dr. Robert N. Willson.——Dr. Carleton N. Russell has returned after service with the American Hospital Corps in France.

Baby Week.—"Baby Week" will be held from March 4 to 11, and it is planned to designate March 5 as Baby Sunday, and pastors of all churches will be asked to make the baby the subject of all sermons. Dr. William Krusen, director of public health and charities, states that the purpose of Baby Week is to bring before all the citizens of the city the importance of the baby in the community life; by educational means to emphasize the necessity for continued care of the city's babies and to impress on the citizens of the community that a large proportion of the deaths of babies is preventable. The following executives were appointed: Dr. Joseph S. Neff, director of the Department of Public Health and Charities; A. Cross, managing director of the Department of Public Health and Charities; Dr. John D. McLean, president of the County Medical Society; Dr. C. Lincoln Furbush; Dr. Howard C. Carpenter, chairman of the executive committee of the Baby Saving Society; Dr. John F. St. Clair; Dr. Henry H. Doan, chief of the Division of Child Hygiene, and John A. Vogelson, chief of the Bureau of Health.

UTAH

Personal.—Dr. Ezekiel R. Dumke, Ogden, has returned after several months' postgraduate study in the East.—— Dr. George E. Hyde has been appointed assistant county physician of Salt Lake County, succeeding Dr. Charles N. Ray, promoted to be county physician, vice Dr. Crayton C. Snyder, resigned.

Rabies.—A systematic effort to eradicate rabies from the state was begun January 16 when S. E. Piper, assistant biologist of the United States Biological Survey, met Dr. Theodore B. Beatty, state health commissioner, to devise a plan of procedure. One of the chief features of the plan will be the extermination of predatory animals such as the coyote, and already the survey has fifteen hunters in the state, with headquarters at Provo. It is proposed to add to this force twenty-five hunters from the deputies of the state fish and game department. Authorization of special funds for this purpose will be asked.

VIRGINIA

Leper Isolated.—George Hodges, the leper from Hopewell, discovered in Richmond, where he had gone for treatment, was reported January 7 to have been isolated on the city farm, where he may become a permanent charge of the city. It is said that Hodges, who is a Greek, cannot be deported because he has been in this country seven years.

Increased Appropriation Asked for Health Department.— Dr. Ernest C. Levy, chief health officer of Richmond, asks an appropriation of $75,050 for the ensuing year. The increase in appropriation is necessitated by the increase in the area and population of Richmond, and the special needs are the establishment of a system of medical inspection of schools and for preventive measures.

Sanatorium Given to Richmond.—Pine Camp, the open-air sanatorium for the treatment of tuberculosis, has been transferred to the municipality of Richmond by the Pine Camp Association which has operated it since its establishment. The annual cost of maintenance of the institution has been $13,000, of which the city council contributed $10,000. Therefore, the additional cost to the city will be only $3,000 a year.

CANADA

Medical Commission Sittings.—The Hon. Mr. Justice Hodgins will resume sittings of the Ontario Medical Com-

mission in Toronto on January 31, to hear the views of those interested in the proposed changes of the Ontario Medical Act relating to the disciplinary powers of the Ontario Medical Council. On Tuesday the Christian Scientists will be heard, and also graduate and other practicing nurses respecting requirements for registration.

Medical Students Recalled.—The pressing need for doctors in the British forces is seen in the action of the British War Office in weeding out from the ranks, from ambulances and in other capacities at the front, twenty to thirty fourth-year medical students of the University of Toronto. These are being sent back to Toronto to complete their course in medicine. They will be given a summer term during the next summer so that they may qualify for their degrees about Christmas, 1916.

Ontario War Hospital Staff Appointed.—Announcement has been made by the Ontario Government of the medical and nursing staff of the Ontario Hospital, about to be opened at Orpington, Kent, England. The director of the hospital has not yet been appointed but it is understand he will be chosen from among Canadian military men already in England and who have been on active service. Dr. Edward Ryan, Kingston, Ont., superintendent of the Rockwood Hospital for the Insane in that city, has been selected as chief of the psychopathic wards which will handle cases of shock and nervous effects of shock. The nurses have all been selected from the Ontario hospitals for the insane. Twenty-eight physicians from Ontario have been appointed on the staff.

Personal.—Dr. J. Standish, a retired physician, 75 years of age, of Palmerston, Ont., has offered his services to attend soldiers mobilizing in that section of Ontario.——Major Ethelbert B. Hardy, M.B., Toronto, now on active service in France, has been raised to the rank of lieutenant-colonel and has command of No. 2 Field Ambulance. He succeeds Lieut.-Col. David W. McPherson, now in command of the convalescent hospital in Surry, England.——Lieut-Col. Henry R. Casgrain, M.D., Windsor, Ont., who was invalided to England from the Mediterranean, has been placed in command of the King's Canadian Canvalescent Hospital at Bushey Park, England.——Dr. G. F. Dewar, Charlottetown, P. E. I., is acting medical superintendent of Falconwood Hospital for the Insane, during the absence of Dr. Goodwill, on active service.——Dr. Charles J. Edgar, North Hatley, Que., arrived in New York, January 22, from England after service for several months on British hospital ships in the Mediterranean.

GENERAL

Missouri Valley Meeting.—The twenty-eighth semiannual meeting of the Medical Society of the Missouri Valley will be held in St. Joseph March 23 and 24 with headquarters at the Robidoux Hotel.

General Blue's Reappointment Confirmed.—On January 10 President Wilson sent to the Senate the name of Dr. Rupert Blue as a renomination for a second term as Surgeon General, United States Public Health Service, and three days later the appointment was confirmed by the Senate.

Medical Jurists to Meet.—The American Association of Medical Jurisprudence will meet in Washington, D. C., May 5 at the New Willard Hotel, under the presidency of Dr. D. Percy Hickling, Washington, D. C. Dr. William A. Woodward has been appointed chairman of the committee of arrangements.

American Life Convention Meeting.—The American section of the American Life Convention will hold its annual meeting at the Hotel Tutewiler, Birmingham, Ala., March 1-3, with Dr. Whitfield Harral, Dallas, Texas, chairman; Dr. Frank W. Foxworthy, Indianapolis, chairman of the program committee, and Dr. Frank L. B. Jenney, Chicago, secretary.

Bequests and Donations.—The following bequests and donations have recently been announced:

Cambridge (Mass.) Hospital, the residue of the estate of Everett W. Raddin, Danvers, provided the institution will hang a portrait of his late wife in some public part of the building.

St. Rose's Cancer House, New York, N. Y.; Home for Aged Cripples, Boston; and St. Luke's Hospital, New Bedford, Mass., each $5,000, by the will of Mrs. Clara E. Seabury.

Hahnemann Medical College, Philadelphia, $35,000; Home for Incurables, $15,000; Protestant Episcopal Hospital, $10,000, by the will of Jacob E. Neaife. These bequests became operative January 15, by the death of a daughter of Mr. Neaife.

Endowment fund of Protestant Episcopal Hospital, Philadelphia, $25,000; Philadelphia Home for Incurables, $5,000, by the will of James Hay.

Medico-Chirurgical College of Philadelphia for the endowment of a Dr. Isaac Ott chair in physiology by the will of the mother of Dr. Ott. An appraisement of the estate in 1905 gave this a value of $73,717.

The University of Pennsylvania, the estate of Dr. Isaac Ott, Easton, on the death of his widow. The chair is for original research work and the occupant is not to teach while holding it. He may study here or abroad, and if he fails to discover anything new on the subject in any one year, the trustees may elect a successor if they deem it advisable.

St. Luke's Hospital, New York City, $566,621, as a remaining interest after the death of the testator's mother; and the Oswego (N. Y.) City Hospital, $10,000, by the will of George B. Sloan.

Vermont Medicine, A New Journal.—The first issue of *Vermont Medicine*, the official organ of the Vermont State Medical Society, has made its appearance. It consists of twenty-eight pages of reading matter, eight pages of advertising, with additional advertising space on its neat cover. Its salutatory editorial declares: "The advertising pages of *Vermont Medicine* will be kept free from the taint of commercialism and rigidly free from the custom which we regret to see is still followed by a few of our contemporaries of advancing the sale of those perilous nostrums which are not properly even commercialism, but robbery. . . . The single purpose of this journal is to promote the cause of scientific medicine in the state of Vermont through influence on the practitioners of medicine." The secretary's page further announces: "No advertisements will be accepted for pharmaceuticals that are not U. S. P. or N. F. preparations, unless they have been approved by the Council on Pharmacy and Chemistry of the American Medical Association." This new state journal is conducted by the publication committee of the Vermont State Medical Association, which committee consists of Drs. James M. Hamilton, Rutland, and Charles F. Dalton, Burlington, respectively secretary and treasurer of the state organization, together with A. Stuart M. Chisholm, Bennington, editor.

FOREIGN

Deaths from Methyl Alcohol Poisoning.—The *Medizinische Klinik* republishes a news item to the effect that in twelve places in a certain province in Hungary there have been sixty-three fatalities and twelve severe but not fatal cases of poisoning from drinking methyl alcohol.

British Medical Directory.—The British Medical Directory for 1916, according to the *Lancet*, shows in some degree the effects of the war on the profession. The number of practitioners eligible for registration is said to be two less than for the previous year, the total registration being given as 42,570. To 1915 the average yearly rate of increase for twenty-five years was said to be 526, and for the five years preceding 1915 it was 420. The figures therefore show a potential deficit of more than 400. The directory gives 3,274 as the number connected with the services, but according to later figures there are 9,626 in the Royal Army Medical Corps alone.

Research in Anthropology.—The Academy of Sciences at Vienna has granted a further subsidy of $960 to Prof. R. Pöch to continue his anthropologic measurements and photographing of the various ethnologic types among the prisoners of war. The *Klin-therap. Wochenschrift* relates that he already has the measurements or pictures or moving-picture films, or all combined of 3,700 of the war captives, embracing all types of Russians and other Slavs. As elsewhere there do not seem to be any pure types; they are all mixtures. Language and fate blend the mixtures together into a group, a people. There are five such groups in Poland and four main groups in the true Russians.

WAR NOTES

Personal.—Dr. Willard T. Grenfell of Labrador, who is serving with the Twenty-Second British Expeditionary Hospital in France, has been commissioned major.——Dr. Charles S. Pancoast, Philadelphia, who went to Vienna in December, 1914, has been promoted and is now in charge of a 4,000-bed hospital at Munkacz in the Carpathians. He has also been decorated with a gold medal by Emperor Francis Joseph.

War Losses in the Profession in Germany.—The *Medizinische Klinik* of December 26 quotes figures showing that the names of 1,084 physicians have appeared on the 400 casualty lists that had been published by that date in Germany. The list includes 37 civilian physician, 377 active medical officers, 373 of the reserve force and 287 assistant medical officers. Of this total, 361 have been killed, 142 severely and 388 less severely wounded, 102 have been taken prisoners, and 90 are missing.

Esperanto and the War.—An Austrian exchange relates that Esperanto has been found quite useful during the war.

A number of German soldiers taken prisoners by the Russian found that their knowledge of Esperanto was of the greatest help to them both in having their wounds cared for and in intercourse otherwise. A green star is worn by those who know Esperanto, and this brought them comrades in many places. In Siberia the Esperantists were able to secure many concessions for themselves and their fellow prisoners by their command of this universal language.

Release of Bárány.—The *Berliner klinische Wochenschrift* relates that Prince Karl of Sweden, who is the president of the committee appointed by the Red Cross to inspect the camps of prisoners of war, has informed the authorities at Vienna that Prof. R. Bárány has been released from captivity in Russia. It will be remembered that when the Nobel prize in medicine was bestowed on him in December, he had been taken prisoner by the Russians at the fall of Przemysl and was at that time in a prison camp at Merv, just east of the Caspian Sea. He is expected to arrive soon in Vienna.

Condition of Serbian Refugees Improved.—Dr. Edward W. Ryan, who was in charge of the American Red Cross Hospital at Belgrade during the three bombardments of that city and who was recently authorized to cooperate with the American ambassador in Rome and the American Relief Clearing House in Paris in the relief of Serbian refugees in Albania, after a tour of Albania, has cabled the American Red Cross headquarters that the condition of refugees is improved, that one boat has already been chartered and that another will be chartered in a few days to carry refugees to Corsica.

The Austrian University During the War.—Professor Menzel of the law department is now rector of the University of Vienna. It is stated that no less than 200 members of the medical faculty are in active service in the field and several have fallen. The total registration is 400 less than the year before, but the women students number 300 more than ever before. The classes are kept up as usual, but popular courses on domestic science and the care of the health have been organized, mainly for the benefit of teachers from other points. Special courses on treatment of the wounded and other war subjects have been well attended. The university has equipped and maintains a large hospital for the wounded, and its athletic grounds were loaned to the city for the raising of vegetables.

Work of the Austrian Red Cross.—A full report of the manifold activity of the Austrian Red Cross was published in the *Klin-therap. Wochenschrift*, Nov. 8, 1915, just received. Two field hospitals, equipped for 300 wounded each, have been enlarged, one to a capacity of 2,000. The Red Cross has also three field stations for medical supplies and other articles, such as slippers, matches, pipes and paper. There are still quite large supplies of drugs, etc., on hand, articles the supply of which has long since given out in civilian drug stores. The Red Cross has further 890 hospitals, convalescent homes, etc., scattered over the country, representing a total of 95,000 beds. The local transportation of the wounded to these various institutions has been systematically aided by the firemen's companies and athletic associations. Medical supplies of value of over 6,000,000 crowns ($1,200,000) have been sent to the front, and nearly twice this has been spent in all. Refreshments are served to passing troops and prisoners at all the railroad stations in Austria, and millions have thus enjoyed the hospitality of the Red Cross. For the last few months the Red Cross has been using up the reserve funds accumulated in previous decades. The Red Cross expedition recently sent to Bulgaria consisted of twenty-five hospital cars, and a two-car laboratory, with accommodations for 500 or 700 sick or wounded. Major Potonkay is in charge of the train and Dr. E. Suchanek is the medical chief. The personnel comprises six physicians and seventy-five nurses and orderlies.

Protest Against Restriction of Exportation of German Medical Publications.—THE JOURNAL mentioned recently (November 20, p. 1830) that the military authorities in the marches or border states of Germany had issued orders that medical books and periodicals which might in any way help the enemy in conducting the war should not be sent out of the country. An Austrian exchange, dated Dec. 6, relates that the officers of the organization of German publishers and of the organized medical publishers have petitioned the authorities to countermand this order. The petition emphasized the neutrality of medical science and expatiated on the fact that German medical literature at present stands at the head of medical literature the world around and that there is danger that it might lose this preeminent position if exportation is forbidden, especially to neutral lands. Another argument advanced is that if the fruits of German medical science are to be cut off from the enemies' countries, then the sick and wounded German soldiers in captivity in these countries would suffer therefrom. Besides all this, the financial existence would be threatened of a number of German publishers who depend exclusively on foreign customers. The petition further asks for the definition and restriction of the prohibition to the exact special fields in which exportation of medical publications might actually wreak hardship on the Germans. As the same mail brought us a three weeks' accumulation of the five leading weeklies in German, it is evident that the petition produced some effect. There is, however, a gap of four or five numbers of each, preceding these issues. The German custom of issuing certain periodicals irregularly, as material accumulates, has made it possible for journals of this "zwanglos" type to wait quietly until more favorable conditions are restored. These are the ones usually to which we append the "Last indexed, June 5, 1915, p. 1948." It has been one of the marvels of this war that the weekly mail from these distant countries has reached THE JOURNAL through all the disturbance as unfailingly as before the war. Although often not in chronologic sequence, sooner or later the missing numbers have arrived until this stoppage by the censor of our German exchanges in November. In 1912 one issue of a large number of our foreign exchanges was found missing from the files, the same date for all, and this was the week the *Titanic* was lost. There has been no loss of mail comparable to this since the war began so far as our exchanges are concerned.

BERLIN LETTER

BERLIN, Dec. 14, 1915.

Personal

Prof. William Stern, director of the psychologic seminar in Breslau, has received a call from Hamburg.

Professor Gross, publisher of the *Archiv für Kriminal-Anthropologie und Kriminalistik*, died in Graz at the age of 67.

The Prussian ministry of public instruction has ordered the erection of a bust of von Behring in the Marburg Institute for Hygiene in memory of the twenty-fifth anniversary of Behring's publication of his work on serum therapy.

Hypnotism in War Hysteria

Professor Nonne recently delivered an interesting lecture before the Hamburg Medical Society on the value of hypnotism in the treatment of so-called war hysteria, a condition which, in his experience, is extremely common among the participants as well as among the injured. Under this head Nonne places the motor and sensory nerve disturbances that are so frequently combined with vasomotor symptoms, with or without mental disturbance. Cases of tic, stubborn tremor and severe and stubborn vasomotor disturbances Nonne regards as being functional and not organic or suborganic. The truth of this belief is confirmed by the good results obtained from hypnotic suggestion in the treatment of these conditions. The causation of this hysteria may therefore be mechanical or pathologic or idiopathic, although the etiologic factors are frequently combined. Nonne does not believe it justifiable to place in a separate classification cases of cramp neuroses, akinesia, dyskinesia amnestica, vasomotor syndrome, and fear and fright neuroses, and he warns against the use of a terminology which apparently indicates an unfavorable prognosis (traumatic neuroses). The war has shown that the conception that hysteria is merely a form of degeneration, as well as the freudian theory, are based on wrong premises. Nonne has based his statements on experiences gained in his capacity of consultant in the reserve hospitals of Schleswig-Holstein and various hospitals of Hamburg. Among 1,800 cases of war injuries there were twenty-six cases of pure neuroses agreeing with the statistics of Biss, Horn and others as to the frequency of traumatic neuroses. Nonne cites cases of hysterical paralyses which were diagnosed as (1) plexus paralysis; (2) cerebral paralysis; (3) spinal paralysis; (4) organic cerebral lesions; (5) ischemic paralysis; (6) arthritis deformans, and (7) inflammation of serous membranes. These wrong diagnoses were in many cases accepted in the various hospitals of which the patients were inmates. It is said that the reason for these wrong diagnoses was the fact that the classical Charcot hysteria is not sufficiently well known, and because these cases are not common in the general practice of a physician during times of peace. The diagnosis of classical cases is easily made because of the characteristic symptomatology.

The experiences gained in the war have confirmed this statement. Restriction of the field of vision is frequently, although not always, present; sensory disturbances occur less often, and anomalies of mucous membrane reflexes occur very irregularly. The hysterical character is usually not present, but vasomotor disturbances occur with astonishing frequency; likewise isolated muscle contractions. Nonne demonstrated cases of isolated contractures of muscles in the peroneal group, and isolated contractures of the elbow joint, the flexor muscles of the thumb and the interossei. In more than half of the cases the neuropathic tendency is missed even when the most careful anamnesis is made. It is impossible to differentiate on the basis of complete absence, or preceding loss, of consciousness. Experience has shown that a somatic trauma alone, aside from a psychogenic cause, may produce the hysterical syndrome. By far the most frequent traumas concerned in the etiology of this condition are, in the order named, shell contusions, wounds, fatigue and fear; finally, there are cases, by no means infrequent, in which a particular exciting cause cannot be demonstrated. We have learned that the hysterical syndrome may, under unusual conditions, occur much more easily in a so-called normal nervous system than has heretofore been believed to be the case, and it is in these cases that Nonne has found the prognosis to be very much better under hypnotic treatment. From the middle of October, 1914, to the middle of September, 1915, Nonne treated sixty-three cases of "grand hysteria." Fifty-one of these patients were cured, including twenty-eight "rapid cures" and twenty-three cases in which the cure was effected more gradually. By means of waking suggestions, Nonne succeeded in curing five patients after previous attempts had failed. In three cases a cure was effected on the day following the hypnotic suggestion *(suggestion à échéance)*. In one case dyskinesia amnestica remained unaffected even under deep hypnosis. Twelve patients could not be cured; ten of these were refractory against hypnosis. Only two became fully hypnotic. A cure was effected in those cases only in which the hysterical syndrome was acute. In those cases in which the development of the condition extended over days or weeks, a cure was effected correspondingly slowly. The duration of the hysterical syndrome and a neuropathic tendency on the part of the patient did not alter the prognosis. A cure was effected, even "rapid cures," in cases of from two to thirteen months' duration. Some of these patients were refractory to the treatment because of a desire not to return to active duty. Nonne cited five cases of stubborn generalized muscle tremor that yielded promptly to hypnotic suggestion. He shows that hypnosis is entirely independent of neuropathic tendencies, general exhaustion and the consequent reduction of resistance, nor did he find any difference in producing hypnosis among people coming from different parts of Germany, from the city or country, or in various walks of life. He frequently saw cases in which the subject yielded easily to hypnotic suggestion. Nonne says that in such cases it is advisable to give the suggestion to the patient that others do not possess the same hypnotic influence over him. Nonne cited four cases of this kind. As to recurrence, Nonne admits that many of these cured patients will have a recurrence if they are subjected to the influence which produced the original attack. That the ordinary garrison duty or field service does not play any part in the production of recurrence was shown by six cases cited. Nonne calls attention to the advantages of hypnotic suggestion: 1. Cures are frequent and rapid. Nonne's patients had all been treated ineffectively for many months in various hospitals. 2. Hypnosis may be regarded as a means of differentiation between "organic" and "functional" cases. Nonne cites the case of an officer who received a grazing bullet wound of the left parietal region and developed a right-sided superior monoparesis with glovelike areas of disturbance of sensation of all kinds of the hands and fingers, but normal tendon and periosteum reflexes and absence of hemiparalysis. In the hypnotic state sensation was normal, and after several treatments the patient was cured. 3. Cases of stubborn tremors and tics of long duration as well as severe vasomotor disturbances were promptly healed by suggestion, showing that these symptoms must have been purely functional. 4. Hypnosis would be of great value in determining the disability of the individual, the degree as well as the duration, so that he can be returned to duty if he is fit for duty. Nonne recognizes that difficulties lie in the way of the adoption of this procedure, particularly as time and patience are required, and the hypnotizer becomes fatigued rapidly and much more severely than does the hydrotherapist or the electrotherapist; nor can he rely on assistants.

LONDON LETTER

LONDON, Jan. 13, 1916.

The War

PREVENTION OF TYPHOID FEVER

If additional proof were required of the value of inoculation against typhoid fever, it is amply furnished by the latest figures given by the government. From the beginning of hostilities only 1,365 cases of typhoid occurred among the British troops in France and Belgium. These figures should be compared with the terrible record of the much smaller South African War in which over 20,000 cases occurred, or with the Spanish-American War. The case mortality is about three times as great in patients who have not been inoculated as in those who have. The methods of preventing typhoid fever are very thorough. In addition to inoculation, a careful search is made for carriers, and no man is employed in the commissariat department who gives a positive Widal reaction. Public health work is carried out on a large scale by means of water analysis and water purification.

THE RECRUITING OF PHYSICIANS FOR THE ARMY

The Central Medical War Committee (an organization initiated by the British Medical Association and recognized by the government) is completing a list of physicians of military age (that is to say, all under the age of 45) who have not yet joined the army. Local and individual difficulties in abandoning civil practice are being fully recognized. Lists of physicians in each area are being prepared to be forwarded to the War Office as soon as the committee is satisfied that the time has come for the physician in question to offer his services. At least a month's notice is given. Before sending in a man's name, the committee will take into account his responsibilities with regard to persons dependent on him and to partners, institutions or public authorities, while in the general interests of the country the medical needs of each area will be thought of and precautions taken so that the proportion to population of physicians remaining in civil practice may be equalized throughout the country. There are residential areas in which the proportion of physicians in civil practice is much higher than in industrial districts, and further calls must be made on men practicing in such areas. The war committee is aware that the conditions under which the public have been accustomed in time of peace to obtain the attendance of physicians cannot continue without modification. The number of physicians who will be required by the army must depend partly on the development of military operations and partly on the amount of wastage among physicians already serving in the army. The understanding is that when the army medical department needs more medical officers, it will state the number required to the Central Medical War Committee; that committee will then inspect the whole list of enrolled men and will select those who, from the information in the possession of the local medical war committees and the general information as to the whole country in the possession of the central committee, can be withdrawn from civil practice with least disadvantage to the public and to themselves. The scheme under which physicians are now invited to enroll insures that they will engage under the conditions which have prevailed since the beginning of the war. That is to say, the commission they promise to accept will be for a year, at the end of which time they will be able to review the position. If the opportunity is lost and compulsion has to be faced, it is possible that the whole medical profession will be converted into a state service when compulsion on the individual will not be limited in time, but he will be required to serve at least for the duration of the war.

The Insurance Act and the Pharmacists

Considerable dissatisfaction exists among pharmacists as to the working of the insurance act. It may be remembered that a capitation fee of half a dollar per annum was allowed by the act for the cost of medicines. The pharmacists claim that this amount is quite sufficient if the act is worked properly and physicians exercise due economy. Unfortunately some do not, and if the amount of money allotted in a particular district on this basis is not sufficient to pay for the medicines, the pharmacists have to submit to a reduction of their bills. These bills are calculated according to a prescribed system—so much for the cost of the drugs according to the market prices, so much for establishment charges (something under 2 cents per prescription) and a dispensing fee (4 cents per prescription). Naturally the pharmacists object to having to pay the penalty of extravagance com-

mitted by physicians. There is the remedy that a physician who has been shown to be guilty of extravagance can be surcharged. In one case as much as $1,500 was deducted from the amount payable to a physician. It was shown that while the average cost of prescriptions in the whole of the county was 18 cents, the average cost of his prescriptions was 80 cents. There was a deficiency in the drug fund of about $35,000 for the year. But while it is easy to bring home such cases of gross extravagance, it is obvious that a good deal of extravagance may be practiced without the possibility of a proof. Another form of extravagance more difficult to detect is due to complaisance in ordering medicine for patients over long periods, after it has become unnecessary, or ordering it for patients who never required it at all. In the perfunctory work which all forms of contract practice encourage, there is a strong tendency simply to write prescriptions after the most hasty examination, or, indeed, simply on the basis of the patients' complaints. As has been pointed out in previous letters, the insurance act in many ways provides an object lesson in the evils of socialism.

PARIS LETTER

PARIS, Jan. 8, 1916.

The War

TREATMENT OF WOUNDS OF WAR

Prof. Pierre Delbet's remarks, before the Société de chirurgie de Paris, on Labarraque's solution and Dakin's solution (THE JOURNAL, Sept. 4, 1915, p. 880; Dec. 11, 1915, p. 2101) aroused an interesting discussion on the treatment of wounds in general. Dr. A. Broca, agrégé at the Faculté de médecine de Paris and surgeon of the hospitals, remarked that since the war, as before, his practice has been (1) to apply simply a compress of dry gauze to uninfected orifices and (2) to touch the flesh with an antiseptic after operation when a phlegmon rendered it necessary to open the tissues up. He employs for this purpose either a 5 per cent. phenol solution or immersion in ether, and the results appeared to him to be good. In any case, he does not believe that the applications are harmful. For later dressings, Broca believes in a dry light dressing in order to permit the wound to get the air as much as possible and to avoid interference with exudations. He seldom uses lavage except for its mechanical effects and, although his assistants have tried various solutions, he himself has found ordinary boiled water quite as useful. There are indications for moist dressings, but they are rare. Broca uses them only when there is a lymphangitic redness around the wound. In cases of diffuse phlegmon he has had good results from a dressing of ether applied during the first three or four days. As for the value of Dakin's solution, Broca is undecided since Tissot reported to the Académie des sciences that this famous solution was inferior to that of Labarraque.

Dr. Quénu, professor of the surgical clinic at the Faculté de médecine de Paris, remarked that he had always been surprised at a recommendation of any one method of dressing for wounds, since wounds are of so many kinds. For recent wounds he uses lavage and especially lavage with hydrogen peroxid which mechanically removes pieces of dead tissue, foreign bodies, etc., and which, moreover, stimulates the wounded tissues, as is shown by the reddening and bleeding of the wound. But once this lavage is done, he believes that it is by all means best to refrain from irrigating the wound, either directly or through drains, except in the case of certain putrid gangrenous wounds, and then only until the gangrenous parts have been eliminated. The important thing appears to him to be above all good drainage and the use of liberal incision at the lowest points to ensure the free flow of pus. There are wounds of some weeks' standing—wounds of amputation in particular—which present a grayish tint, sometimes with false membranes on their surfaces or with abundant suppurating grayish granulating tissue, bleeding at each dressing. For such wounds two methods of simultaneous treatment have given Quénu good results. He uses applications of hot air at 60 C (140 F) every day or every other day and also dressings with powdered cinchona. After some dressings with cinchona the tissues become red, vascular and do not bleed when the dressing of dry gauze is removed. The cinchona gives excellent results also in gangrenous wounds. With this dressing pus, which perhaps has been quite liquid and abundant, becomes scanty and thick, an excellent sign. The applications of hot air act, not only on the wound itself, but also on the borders of the wound. Quénu uses them also for cicatrized wounds which remain a little red and edematous.

Dr. Chaput, surgeon of the hospitals of Paris, seldom employs lavage or wet dressings. He is convinced that the best treatment of infected wounds consists of aseptic dry dressings, liberal drainage and applications of zinc peroxid or irradiation by electric lamps with reflectors placed as near the wound as the patient can endure. There is no antiseptic so powerful as electric light; with treatments of an hour a day, the most infected wounds rapidly become clean when the drainage is sufficient, and the fever falls in forty-eight hours. Chaput uses wet dressings only when there is no skin wound. However, he has recently used, with good results, magnesium chlorid in 1.2 per cent. solution, as recommended by Pierre Delbet for diffuse phlegmon and erysipelas. He believes that all solutions except magnesium chlorid are harmful rather than helpful. Lavage of wounds is a deplorable practice, especially injection into drains by means of a syringe. It should be recalled that Marion, injecting air into the bladder, produced a fatal gaseous embolism. Liquids injected into wounds under pressure also pass into the vessels and carry pus with them. Moreover, they distend and lacerate the wounds and prevent them from healing. When there is a stagnant condition in a cavity, liberal drainage is necessary. In such a case lavage may be employed but under special precautions. Chaput merely pours into the cavity or into the drain from a test tube some such fluid as boiled water, artificial serum, magnesium chlorid solution, picric acid solution or solution of methylene blue. Under such conditions lavage is useful and not subject to the dangers of injection under pressure.

Dr. Toussaint confirmed Chaput's opinion with regard to the service given by electric heat in cleansing infected wounds, the results of wounds of war. Dr. Toussaint has used this method with success in large profoundly infected osseous wounds. After being heated, they are covered with dry sterile compresses impregnated with benzoin melted in a water bath. This is deodorizing, analgesic and an antiseptic of the highest class.

SERIOUS FRACTURES OF THE SKULL BY SMALL FRAGMENTS OF SHELL

The late Professor Oui of Lille called the attention of the Académie de médecine to this subject (THE JOURNAL, Aug. 7, 1915, p. 546). Drs. Lefort and Joltrain recently insisted at a meeting of the Société de chirurgie de Paris on the necessity of exploring as a routine measure the surface of the skull in cases of scalp wounds. The apparent insignificance of the cutaneous wound, especially when made by small fragments of shell, is often deceptive. A more or less bulging wound of a few millimeters in diameter, such as made by projectiles which strike the head perpendicularly, should be suspected more than a furroughed wound of some cubic centimeters in length produced by a projectile striking the scalp tangentially. The first has more chance of having touched or passed through the bone surface than the second. The two cases reported by Lefort and Joltrain confirmed these conclusions. The first patient received so small a wound on the top of the head that it was overlooked for a long time. He was sent, a month later, into a medical service with the diagnosis of cerebrospinal meningitis. He died there of an unrecognized fracture of the skull. The projectile was scarcely bigger than a piece of shot. More insignificant still was the appearance of the wound in the second case. The patient reported no lesion of the head; he complained only of a wounded arm, and it was on observation of the Babinski sign that the cerebral organic lesion was diagnosed. A small wound was found and explored. Trephining saved the patient's life.

Dr. H. Roulland, at the Réunion médico-chirurgicale de la X-e armée, also spoke on skull wounds by small projectiles. Such projectiles may either strike the skull, remaining embedded under the skin and merely scratching the bone, or they may embed themselves in the external surface of the bone producing a bulge of the internal surface much wider than the diameter of the projectile (which calls for trephining) or they may traverse the bony wall completely and penetrate either into the dura mater or into the nervous substance. In this case also it is necessary to operate as soon as possible and to extract the projectile. Roulland reported the case of a very small projectile which traversed the temporal region and remained unsuspected for twenty-seven days in spite of the phenomena of aphasia, headache and vomiting. Trephining evacuated a shirt-stud abscess of the dura mater, and the patient recovered completely.

THE FAILURE OF CATGUT IN CONTINUOUS SUTURES

Dr. Chaput, surgeon of the hospitals of Paris, reported to the Société de chirurgie de Paris two cases which show the

unsatisfactory character of catgut in ligatures in continuity. These were two cases of ligature of the femoral artery. Very soon after ligature the pulse became perceptible and the artery became permeable below the ligature. In the other case a catgut ligature *en masse* was twice followed by hemorrhage and hemostasis was secured only by a silk ligature. What is the explanation of these phenomena? Is it the greater absorbability of catgut? Were the ligatures not drawn tightly enough? Was septicemia present? Chaput does not think that any of these furnish the explanation. He believes that there was an alteration of the arterial walls which permitted the tunica media to support the ligature without breaking, and that there was an insufficient coagulation of the blood. The silk ligature did not break the tunica media but its irritating action on the tissues and its prolonged presence inflamed the arterial walls, including the tunica interna, and thus produced a resistant clot. Why is catgut ligature always sufficient in the case of severed arteries? Because in such cases the arterial stump beyond the ligature is invaded by proliferating tissue, which involves the whole wound, so that, after the catgut is absorbed, if the ligature itself has not produced obliteration of the caliber of the artery, the circulation is arrested by the obliteration produced in the arterial stump beyond the ligature.

The conclusion to be drawn from these cases is that silk gives a more reliable hemostasis than catgut for ligatures in continuity, and that in case of repeated hemorrhages silk should be used in preference to catgut.

KEEPING SERIOUSLY WOUNDED PATIENTS WARM AT THE FIRST AID POSTS

At the Réunion médico-chirurgicale de la V-armée, Dr. Collin called attention to the necessity of systematically warming the seriously wounded patients who are always chilled by hemorrhages and by being undressed. The staff should always have boiling water to fill the hot-water bottles used during transportation on the litter. The first-aid post should be well warmed. The litter bearer should be especially charged with the duty of replacing hot-water bottles under the coverings near the patient and of giving the patients hot coffee with alcohol. The first-aid post should furnish hot water bottles to be placed in the ambulance for the transportation of patients to the rear.

A PRACTICAL METHOD FOR THE DESTRUCTION OF THE EGGS OF LICE

Dr. de Clérambault sent to the same meeting a note calling attention to the difficulty of destroying the eggs of lice in clothing since they adhere closely to the fabric and their envelope is resistant to antiseptics. It is easy, however, to destroy them by means of a hot iron, either a tailor's or laundress' iron, which should be passed carefully over the seams so as to penetrate into the folds. The seams of the sleeves, the collar, the belt and the flap of the trousers should be especially ironed with the point of the iron. The operation is rapidly done and is efficacious. It is well to give the work to men who were formerly regimental tailors. It may be done quickly while the men are going through the douche and changing body linen.

Marriages

ELMER ROY GRIGG, M.D., Anaconda, Mont., to Miss Lavina V. Bartzen of Butte, Mont., in Helena, Mont., January 10.

CLAUDE L. SELLERS, M.D., St. Louis, to Mrs. Mildred J. McCasland of East St. Louis, Ill., in St. Louis, January 20.

WILLIAM THOMAS COLLINS, M.D., Freeport, Ill., to Miss Gertrude Hollister of Lake Linden, Mich., December 25.

JOSEPH CYRUS STEADMAN, M.D., Jamaica Plains, Boston, to Mrs. Mabel Taft Carver of Springfield, Mass., recently.

RAYMOND JOHN NEFF, M.D., Oak Park, Ill., to Miss Nina Beggs of Chicago, in Crown Point, Ind., January 18.

WILLIAM THOMAS FRAWLEY, M.D., to Miss Eleanor Gertrude Doyle, both of Pittsfield, Mass., January 10.

ROBERT EMMETT MCCARTEN, M.D., Great Falls, Mont., to Miss Ann Shannon of Helena, Mont., January 14.

ELMER HOWARD HANKEY, M.D., Pittsburgh, to Miss Mary Elizabeth Walker of Ford City, Pa., January 19.

DAVID TROY CHEAIRS, M.D., Tillar, Ark., to Miss Minnie Maye Taylor of Little Rock, Ark., January 20.

RALPH HANSON, M.D., Spokane, Wash., to Miss Kathryn Burris of Butte, Mont., January 12.

Deaths

Wesley W. Townsend, M.D. Michigan College of Medicine and Surgery, Detroit, 1896; aged 42; a Fellow of the American Medical Association; surgeon to the Minneapolis, St. Paul and Sault Ste. Marie Railway; advisory surgeon to the steamship lines of Sault Ste. Marie, Mich.; formerly a member of the Association of Military Surgeons of the United States; a member of the visiting staff of the Sault Ste. Marie General Hospital; while curling at the Soo rink, Sault Ste. Marie, January 17, fell, striking his head, and died a short time later from cerebral hemorrhage.

Patrick V. Carlin, M.D. Denver College of Medicine, 1882; aged 61; a Fellow of the American Medical Association; formerly demonstrator of anatomy, adjunct lecturer on anatomy and clinical lecturer on obstetrics in his alma mater; physician to St. Joseph's Hospital, Denver; consulting physician to Mercy Hospital, Denver, and consulting surgeon to the Colorado and Southern, Union Pacific, and other railroads; a member of the school board of Denver since 1903; died at his home in that city, January 16, from cerebral hemorrhage.

Alfred Ira Noble, M.D. Medical School of Maine, Brunswick, 1886; aged 55; a Fellow of the American Medical Association and a member of the American Medico-Psychological Association; for ten years superintendent of the Michigan Asylum for the Insane, Kalamazoo, and one of the best-known authorities on the insane and psychiatry in the United States; while en route at a meeting of officials of state insane hospitals at Pontiac, Mich., died suddenly, January 20, in the Hotel Tuller, Detroit, from acute gastritis.

William Henry Maynard, M.D. Syracuse (N. Y.) College of Medicine, 1883; aged 56; for more than thirty years a practitioner of Syracuse; prior to that time for two years physician to the Onondaga County Indian Reservation; died in the Women's and Children's Hospital, Syracuse, January 15, after a second operation for gastric ulcer. The members of the Syracuse Academy of Medicine, of which Dr. Maynard was a member and past president, attended the funeral in a body.

William Irving Thornton, M.D. University of Buffalo, 1899; aged 37; a Fellow of the American Medical Association and a well-known practitioner of Buffalo; a member of the board of directors of the Lafayette General Hospital, Buffalo; physician to the Good Samaritan Dispensary and attending physician to the Buffalo Orphan Asylum; died at his home in Buffalo, January 16, from pleuropneumonia.

James J. Durrett, M.D. University of Maryland, Baltimore, 1897; aged 43; a member of the West Virginia State Medical Association; who had been ill as the result of a nervous breakdown; died at his home in Fairmont, W. Va., January 19, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent.

Leonard Waterman, M.D. University of Michigan, Ann Arbor, 1913; aged 27; a Fellow of the American Medical Association; for a year after his graduation an intern in the Copper Range Hospital, Trimountain, Mich., and later of Norman, Neb.; died in a hospital in Omaha, January 20, after an operation for appendicitis.

Carl E. Walbrach, M.D. University of Munich, Bavaria, 1898; aged 41; a Fellow of the American Medical Association; instructor in histology in the Denver and Gross Medical College, Denver, and visiting physician to the Denver County Hospital; died at the home of his father in Denver, January 16.

Z. Swift Webb, M.D. College of Physicians and Surgeons in the City of New York, 1848; aged 91; formerly a Fellow of the American Medical Association and of the New York Academy of Medicine; for fifty-five years a practitioner of New York City; died at his home in Woodbury, Conn., about January 20.

Charles McCreight, M.D. University of Pennsylvania, Philadelphia, 1900; aged 42; a member of the Medical Society of the State of Pennsylvania; and a graduate of the Philadelphia College of Pharmacy in 1894; died at his home in Philadelphia, January 22, from cirrhosis of the liver.

John Gilbert Spangler, M.D. College of Physicians and Surgeons, Baltimore, 1887; aged 55; a member of the Medical Society of the State of Pennsylvania; of Mapleton Depot, Pa.; while going over the Pennsylvania System at Mapleton, January 7, was struck by a train and instantly killed.

Franklin Edward Wolfe, M.D. Long Island College Hospital, Brooklyn, 1890; aged 48; for several years attending physician to the State Feeble-Minded School, Medical Lake, Wash.; died in St. Luke's Hospital, Spokane, Wash., January 7, after an operation for the removal of gallstones.

Winfield S. Shafer, M.D. Eclectic Medical Institute, Cincinnati, 1886; aged 63; a Fellow of the American Medical Association; proprietor and superintendent of Woodlawn Hospital, Rochester, Ind.; died at the home of his son in Chicago, January 22, from carcinoma of the liver.

Henry M. Jewett, M.D. College of Physicians and Surgeons, Baltimore, 1888; aged 56; formerly attending surgeon to the Roger Williams' Eye, Ear and Throat Infirmary, Providence, R. I., and a practitioner of Providence; died at his home in Edgewood, Providence, January 19.

Melvin Edmond DeGroat, M.D. Michigan College of Medicine and Surgery, Detroit, 1897; aged 51; a member of the Oklahoma State Medical Association; a specialist on diseases of the eye, ear, nose and throat; died at his home in Alva, Okla., January 11, from heart disease.

Leo Achille Gauvreau, M.D. Laval University, Quebec, 1878; aged 60; supreme medical examiner and treasurer of the United Societies of Canadian French; for twenty-nine years a practitioner of Alpena, Mich.; died at his home in that city, January 20, from heart disease.

Henry Blank, M.D. Rush Medical College, 1885; aged 54; a Fellow of the American Medical Association; for twenty years professor of surgery in the Wisconsin College of Physicians and Surgeons, Milwaukee; died at his home in Milwaukee, January 12, from nephritis.

Harold Walker Banks, M.D. Rush Medical College, 1897; aged 59; formerly of Escanaba, Mich.; district surgeon to the Chicago and Northwestern Railway; local surgeon to other railways; died at his home in Brookfield (R. F. D. Charlotte), Mich., about January 12.

Benjamin Lundy Fussell, M.D. Jefferson Medical College, 1859; aged 75; for five years superintendent of a sanatorium in Spiceland, Ind., but prior to and after that time a practitioner of Markleville, Ind.; died at his home in that place, January 16, from pneumonia.

James Irving Tibbetts, M.D. Central College of Physicians and Surgeons, Indianapolis, 1883; aged 67; a Fellow of the American Medical Association and a well-known practitioner of Hennepin County, Minn.; died at his home in Wayzata, Minn., January 5.

Ephraim S. Evans, M.D. Chicago Homeopathic Medical College, 1889; aged 76; a quarter of a century ago prominent in Columbus, Ohio, as a specialist on diseases of the eye and ear; died in the Franklin County (Ohio) Infirmary, January 17, from arteriosclerosis.

Eugene Mark Worthen, M.D. Dartmouth Medical School, Hanover, N. H., 1901; aged 43; a Fellow of the American Medical Association; died at his home in Ashland, N. H., Dec. 31, 1915, from pulmonary tuberculosis, after an illness of four years.

Christopher Columbus Howell, M.D. University of Nashville, Tenn., 1872; aged 67; a member of the Tennessee State Medical Association and a practitioner of McNairy County, Tenn., for thirty years; died at his home, Dec. 28, 1915, from pneumonia.

Ernest Frank Nelson, M.D. Medico-Chirurgical College of Philadelphia, 1899; aged 46; a Fellow of the American Medical Association and a well-known practitioner of Grove City, Pa.; died at his home in that place, January 18, from pneumonia.

Edward Wright Groll, M.D. Harvard Medical School, Boston, 1893; aged 45; a member of the staff of the Binghamton (N. Y.) State Hospital for about four years; died at his home in Germantown, Philadelphia, January 5, from erysipelas.

Daniel M. Camerer, M.D. Rush Medical College, 1849; at the time of his death the oldest living graduate of that institution; aged 91; said to have been the oldest practitioner of Illinois; died at his home in Chrisman, Ill., January 29.

David Joseph Hamburg, M.D. College of Physicians and Surgeons in the City of New York, 1894; a Fellow of the American Medical Association; died at his home in New York City, January 21, from pneumonia.

John Pitts Colegrove, M.D. University of Buffalo, N. Y., 1875; aged 83; who gave up practice in 1890 to develop and become an operator in the Chipmunk Oil Field; died at his home in Salamanca, N. Y., January 15.

Elisha Belcher Hyde, M.D. New York University, New York City, 1883; aged 67; who gave up the practice of medicine twenty years ago to take up the work of map making; died at his home in Brooklyn, January 14, from bronchitis.

Frank H. Pugh, M.D. Miami Medical College, Cincinnati, 1890; aged 53; a member of the Ohio State Medical Association; died at his home in Bryan, Ohio, Oct. 28, 1915, from Stokes-Adams' disease.

Thomas F. Spillane, M.D. Detroit College of Medicine and Surgery, 1899; aged 42; a member of the Michigan State Medical Society; was found dead from heart disease in his office in Detroit, January 18.

Luther Jackson Harvey, M.D. Washington University, St. Louis, 1875; aged 64; a Fellow of the American Medical Association; died at his home in Griggsville, Ill., January 17, from cerebral hemorrhage.

George Vander Berg Rockwell, M.D. Bellevue Hospital Medical College, 1882; aged 57; a retired practitioner of the Bedford section of Brooklyn; died at his home, January 10, from cirrhosis of the liver.

Edmund Joseph Ball, M.D. College of Physicians and Surgeons, Chicago, 1900, aged 42; a member of the Board of Health of Mishawaka, Ind.; died in West Baden, Ind., January 10, from pneumonia.

John M. McDuff, M.D. Memphis Hospital Medical College, 1888; aged 50; of Jourdanton, Texas; physician of Atascosa County; was found dead in a thicket near Pleasanton, Texas, January 10.

James M. Wood, M.D. University of Tennessee, Nashville, 1888; aged 55; a Fellow of the American Medical Association; died at his home in Greensburg, Ind., January 14, from gallstone disease.

Absalom Jackson Flowers, M.D. Western Pennsylvania Medical College, Pittsburgh, 1891; aged 59; formerly a clergyman; died at his home in Fairmont, W. Va., January 5, from arteriosclerosis.

Arathena Bianca Drake, M.D. College of Physicians and Surgeons, Boston, 1894; aged 87; for more than forty years a practitioner of South Boston, Mass.; died at her home in that city, January 21.

John Alfred Collins, M.D. Bellevue Hospital Medical College, 1869; formerly a member of the Medical Society of the State of North Carolina; died at his home in Enfield, N. C., Dec. 23, 1915.

Samuel Dings, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1889; aged 57; a member of the Iowa State Medical Society; died at his home in Keota, Iowa, January 14, from pneumonia.

Guy Holbrook, M.D. Albany (N. Y.) Medical College, 1866; aged 70; formerly a member of the Massachusetts and New Hampshire medical societies; died at his home in Boston, January 1.

Robert Frederick Nitzsche, M.D. Rush Medical College, 1877; aged 86; a pioneer practitioner of Dubuque, Iowa; died at the home of his daughter in Dubuque, January 9, from bronchopneumonia.

Joseph Watson, M.D. Medical College of Ohio, Cincinnati, 1876; aged 62; a Fellow of the American Medical Association; died at his home in Cincinnati, January 16, from cerebral hemorrhage.

Richard L. Stevenson (license, Morgan County, Ala., 1878), for forty years a practitioner of New Decatur, Ala.; a Confederate veteran; died on his farm near New Decatur, January 13.

Llewellyn D. Chandler, M.D. Baltimore (Md.) College, 1903; aged 32; formerly of Central Falls, R. I.; died at his home in Hammond, W. Va.; about January 10, from pneumonia.

James Douglas Bryant, M.D. Long Island College Hospital, Brooklyn, 1892; aged 45; a Fellow of the American Medical Association; died at his home in Kingston, N. Y., January 13.

Harry F. Boatman, M.D. Rush Medical College, 1902; for two years a member of the staff of the Independence (Iowa) State Hospital; died at his home in Los Angeles, January 10.

Alonzo P. Charlton, M.D. Jefferson Medical College, 1880; aged 56; also a druggist; died at his home in Philadelphia, January 12, from heart disease.

Albert T. Koch, M.D. Bennett Medical College, Chicago, 1874; aged 76; for nearly half a century a practitioner of Wausau, Wis.; died at his home in that place, recently, from influenza.

John Fletcher Neal (license, Nebraska, 1891) aged 80; a practitioner since 1859; for more than fifty years a resident of Peru, Neb.; died at his home in that place, January 10.

William Hill, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1865; aged 83; died at his home in Rochester, Ind., January 21, from ptomain poisoning.

Charles F. Kennedy, M.D. Northwestern University Medical School, Chicago, 1887; aged 54; died at his home in Beatrice, Neb., January 8, from cerebral hemorrhage.

David W. Scott, M.D. Eclectic Medical Institute, Cincinnati, 1871; aged 83; for many years a practitioner of Freeport, Ill.; died in Zion City, Ill., January 16.

Wilson Brown, M.D. Missouri Medical College, St. Louis, 1878; aged 71; of Alto Pass, Ill.; died January 16, at the Hale Sanatorium, Anna, Ill., from diabetes.

Edward Thomson (license, Missouri, 1902), aged 67; an educator, author and lecturer of St. Louis; died at the home of his son in San Antonio, Texas, January 15.

H. J. Freeman (license, Missouri, 1883); aged 85; a practitioner for nearly sixty years; died in his apartment in Joplin, Mo., January 5, from senile debility.

Eugene D. Martineaut, M.D. University of California, San Francisco, 1873; aged 70; a veteran of the Civil War; died at his home in San Francisco, January 10.

Norvel H. Baker, M.D. Baltimore Medical College, 1882; aged 59; formerly a practitioner and druggist of Gillette, Wyo., died in Sheridan, Wyo., January 10.

E. Parke Edwards, M.D. Grand Rapids (Mich.) Medical College, 1900; aged 43; died at his home in Highland Park, Detroit, January 10, from heart disease.

Nicholas M. Corbin, M.D. Medical College of Virginia, Richmond, 1864; aged 73; formerly of Point Eastern, Va.; died in Ashland, Va., Oct. 4, 1915.

William W. Bower, M.D. Detroit College of Medicine and Surgery, 1895; aged 50; died at his home in Camden, Mich., January 15, from influenza.

Wyman Alexander Cameron, M.D. University of Toronto, Ont., 1915; aged 27; died at his home in Advocate, N. S., October 1, from typhoid fever.

William M. Johnson, M.D. Physio-Medical Institute, Cincinnati, 1885; formerly of Chillicothe, Ohio; died at his home in Redlands, Calif., recently.

Samuel S. Canby, M.D. Missouri Medical College, St. Louis, 1878; aged 67; died at his home in Calhoun, Ill., January 17, from pneumonia.

J. B. Wilson (license, Kentucky, thirty-three years' practice, 1893), aged 78; died at his home in Hardin, Ky., January 12, from pneumonia.

William John McCauley, M.D. University of Michigan, Ann Arbor, 1912; aged 28; died at his home in Ellensburg, Wash., January 3.

Mary A. Nueneman, M.D. Penn Medical University, Philadelphia, 1881; aged 58; died at her home in Philadelphia, January 17.

Jacob E. Ensminger (license, West Virginia, 1881), aged 73; died at his home in Farmington, W. Va., January 14, from pneumonia.

Lewis M. Leaming, M.D. Rush Medical College, 1895; aged 42; died at his home in Otterbein, Ind., January 12, from nephritis.

John M. Tucker, M.D. Medical College of Georgia, Augusta, 1886; of Louvale, Ga.; died in Columbus, Ga., November 10.

Benjamin F. Wayman (license, Illinois, 1878), aged 63; died at his home in Walnut Hill, Ill., January 5, from organic heart disease.

John W. Strickland, M.D. Medical College of Georgia, Augusta, 1899; aged 50; died at his home in Macclenny, Fla., January 15.

Julius C. Petit, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1875; aged 73; died at his home in St. Louis, January 12.

Robert M. Brown, M.D. Louisville (Ky.) Medical College 1889; aged 60; died at his home in Bible Hill, Tenn., January 12.

Association News

THE DETROIT SESSION

The Local Committee on Arrangements, and Suggestions for Making Hotel Reservations, with a Preliminary List of Hotels

The officers of the local Committee on Arrangements for the Detroit Session are: chairman, Louis J. Hirschman; treasurer, Thaddeus Walker; secretary, Ernest K. Cullen. The chairmen of subcommittees are: Finance, Ernest W. Haass; Entertainment, Arthur D. Holmes; Registration, Frank B. Walker; Printing and Publication, James H. Dempster; Halls and Meeting Places, Frank B. Tibbals; Scientific Exhibits, J. Walter Vaughan; Commercial Exhibits, John N. Bell; Hotels, Rolland Parmeter, and Automobiles, Angus McLean. This committee has established an office at 33 High Street, East, Detroit. All communications from Fellows to any members of the committee should be mailed to this address.

It is the desire of the Committee on Arrangements to assist the Fellows in making hotel reservations, and Fellows are urged to make applications for reservations through the committee rather than by addressing the hotels directly. On receipt of a request for a reservation, the committee will take up the matter and have the management of one of the hotels advise the Fellow of the reservation which has been made. In making applications, Fellows should indicate the hotel at which they desire to be located, naming a second choice; they should indicate the number of rooms, whether with or without bath, they desire for the accommodation of their party, and state the rate which they are willing to pay. When these reservations are made and confirmed, should anything occur which will prevent the Fellow occupying these quarters, he should at once ask the Committee on Arrangements for a release in order that the rooms may be available for others who may desire accommodations.

A partial list of the available hotels, giving the number of rooms in each and the rates per day, follows. A more detailed list is being compiled, and the local committee gives assurance that all who attend the annual session will be provided with comfortable accommodations. The prices mentioned, except when otherwise indicated, are on the European plan.

RATES AT DETROIT HOTELS

Hotel	No. of Rooms	Rate per Day — Single	Double
Addison	50	$2.00	$2.50
Berghoff	72	1.50	2.00
Brunswick	75	1.50	2.75
Burns	100	1.50	3.50
Cadillac	250	2.50	4.00
Carlsbad	82	1.50	2.50
Charles	85	1.50	2.50
Charlevoix	200	1.50	3.00
Clayton	70	1.50	3.00
Eldorado	100	2.00	3.00
Grand Union	48	1.50	2.50
Griswold	175	2.00-$2.50	3.00-$4.00
Henry Clay	240	1.50	2.00
Hoffman	200	1.25	2.50
Imperial	80	1.50	2.00
Lenox	210	2.00	3.00
Library Park	75	2.00	3.00
Madison	200	2.00	2.50
Marietta	25	1.50	2.00
Metropole (Stag)	70	1.50- 2.50	2.50- 3.00
Morgan	100	1.50	2.50
Normandie	105	1.50	3.00
Northern	20	1.00	....
Norton (Stag)	68	1.50	3.00
Oriental (Stag)	80	1.25	2.50
Oxford	72	2.50	3.00
Ponchartrain	425	2.50	4.00
Pinehurst	20	1.50	2.00
Rexmere	37	2.00	3.00
Statler	1,000	1.50- 5.00	3.00- 7.00
Ste. Claire*	100	3.50	7.00
Stevenson	150	1.25	3.00
Tuller	600	1.50	2.50
Wayne	175	2.00	3.00

* American plan.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

BROMID NOSTRUMS IN EPILEPSY

A few days ago THE JOURNAL received the following letter:

To the Editor:—A great many people have asked me concerning the remedy of a Dr. F. C. Grant, of Kansas City, known as an epileptic cure. Have you any record of this remedy? I suppose it is one of the usual fakes, but I would like to be armed with a proper knowledge in the matter. T. C. WITHERSPOON, M.D., Butte, Mont.

The same mail that brought this letter from Butte, Mont., curiously enough brought the following from Welaka, Fla., which answers Dr. Witherspoon.

To the Editor: — The issue of THE JOURNAL of Sept. 4, 1915, page 894, contains reference to Grant's Epilepsy Cure, a proprietary nostrum made and sold by Dr. F. E. Grant of Kansas City, Mo. The laboratory examination by the Association's chemist shows this alleged cure to contain the following ingredients:

"Alcohol (by volume)..... 1.50 per cent.
"Potassium (K^+) (by weight)... 4.57 per cent.
"Sodium (Na^+) (by weight)... 0.19 per cent.
"Bromid (Br^-) (by weight)... 9.76 per cent.
"Chlorid (Cl^-) (by weight)... 0.04 per cent.

"The directions on the bottle call for Grant's cure to be given: 'Two Teaspoonfuls after Breakfast and the Noon Meal. Three Teaspoonfuls On Retiring.' This means that the victim is unknowingly taking the equivalent of seventy grains of potassium bromid daily and yet Grant has the impudent effrontery to say: 'There is nothing injurious to the system in this medicine.'"

I desire to call attention to two important facts in connection with the use of this nostrum in the treatment of epilepsy. The first is the presence of alcohol to the extent of 1.50% by volume. It is difficult to conceive of anything more unscientific in the prolonged treatment of the Essential Epilepsies than the use of alcohol in *any* form and in *any* amount.

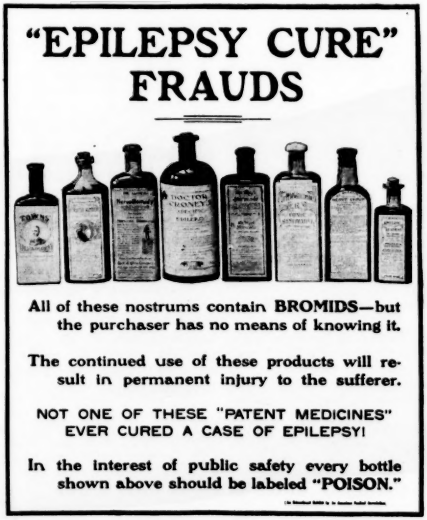
With a brain whose cortical motor cells are perhaps congenitally deficient, undersized, or poorly insulated, and therefore more susceptible to irritation from the slightest chemical poison of any kind, it clearly stands to reason that all irritating substances should be rigidly excluded from the epileptic's diet and from any treatment that may be given him. "Having a great affinity for water and being a coagulant of protein, alcohol tends to irritate and destroy cells. It is therefore a general protoplasmic poison." (Bastedo.)

I have never known of a single case of epilepsy cured by the bromids alone, although they possess a limited value in suppressing cortical irritability and in holding convulsions in check (if such action ever be beneficial), while other remedial agents that act through more vitalizing and reconstructive processes have time for action. The administration of the bromids in epilepsy should be along systematic lines and under a definite rule of procedure, as the dose is of the greatest importance, and no one can determine the correct amount to be given without first making a personal study of the patient.

Nothing less scientific could be imagined than prescribing the same dose for all patients alike, and at long range, without any examination of the patient whatever, or without knowledge as to the particular type of epilepsy from which the patient is suffering. The personal equation, the individual susceptibility, must always be taken into account in the prescribing of any drug. Some epileptics of the grand mal type, who possess good stamina and an unimpaired digestive apparatus, can take with impunity from twenty to twenty-five grains of bromid three times a day for months. Others, apparently of the same type and degree of stamina, are unable to take more than ten or fifteen grains three times a day under the same conditions without suffering from bromism, gastro-intestinal disturbance, muscular enfeeblement, somnolence, loss of memory, etc. Experience has taught those who see many cases of epilepsy that it is best in all cases in which it seems advisable to administer the bromids to begin with from five to seven grains three times a day, gradually increasing it to the point of physiologic toleration without inducing manifestations of bromism, and the average maximum dose that meets these requirements rarely exceeds from fifteen to seventeen grains three times a day.

There is a point of toleration in each individual case beyond which it is not wise to go, and the epileptic in whom this exact point of toleration is found will be the one most benefited by the bromids. In view of the foregoing it is my opinion that any remedy, or alleged remedy, for the cure of epilepsy that contains alcohol in any form or in any amount, or in which the bromid dose exceeds forty or fifty grains daily, even for the most violent and intractable cases, is wholly unscientific and will always do more harm than good. In view of the extent to which "epilepsy cures" whose chief ingredient is bromid, are advertised, and the wholesale and irreparable harm they do to epileptics who are prescribed for at long range, the Federal Government should require the fixing of a maximum dose of bromid in all proprietary preparations put on the market, and the amount of all the bromids combined should not exceed in dose from forty to fifty grains in twenty-four hours.

D. C. MAIN, M.D., Welaka, Fla.


"EPILEPSY CURE" FRAUDS
All of these nostrums contain BROMIDS—but the purchaser has no means of knowing it.
The continued use of these products will result in permanent injury to the sufferer.
NOT ONE OF THESE "PATENT MEDICINES" EVER CURED A CASE OF EPILEPSY!
In the interest of public safety every bottle shown above should be labeled "POISON."

Miniature reproduction of one of thirty-one educational posters prepared by the Propaganda Department and illustrating the nostrum evil and quackery. The originals measure 22 inches by 28 inches. Send for the complete catalogue of "Lantern Slides and Exhibit Cards."

Some of our readers will remember that during 1915 the Propaganda Department, with the aid of the Association's Chemical Laboratory, investigated a number of so-called epilepsy cures. This material has been collected and published in pamphlet form.[1] In addition the Propaganda Department has added to its list of Educational Posters dealing with the "patent medicine" evil a card on "Epilepsy Cure Frauds." This card we are reproducing in miniature on this page.

Organizations and institutions that are concerned in the care or treatment of epileptics may find this material of

1. "Epilepsy Cure Frauds," price 10 cents, postpaid.

educational value. The Craig Colony for Epileptics of New York State, prepared an interesting and instructive exhibit on the subject of epilepsy at the meeting of the Conference of Charities and Corrections in Albany last November. The Association's educational poster and a hundred copies of the "Epilepsy Cure Frauds" pamphlet for free distribution were part of the Colony's exhibit. Dr. William T. Shanahan, superintendent of the Colony, wrote the Association after the meeting that the educational poster awakened interest and "the hundred copies of the pamphlet were in demand and we could have used more to advantage."

Correspondence

A Contribution to the History of Medical Education in the United States

To the Editor:—In 1877 and 1878, I undertook the organization and establishment in New York City of a medical college, as set forth in the letter here reproduced. The plan outlined had been submitted to several of the leading members of the profession, among whom were Profs. Willard Parker, Frank H. Hamilton, Lewis A. Sayre, A. Jacobi and others, and, without exception, they expressed an encouraging approval.

In view of the very great probability that a school with such an advanced standard of requirements for admission and graduation could not compete financially with the short term colleges, many of which were matriculating and graduating practically all who could pay the fee, it was decided that unless a sum of money sufficient to pay for suitable buildings and equipment could be secured, it would be unwise to launch the enterprise. For two years, I tried to enlist the aid of the few rich persons I could approach, but failed, and in 1881, my colleagues and I organized the Polyclinic, which represented the "fourth year course" of the proposed school.

It will be recalled that a four years' course was first offered in the Harvard Medical School in 1880, but was not made compulsory until the fall of 1892.

This same course was instituted in the medical department of the University of Pennsylvania, with the class that began in the session of 1893-1894, and graduated in the spring of 1897.

The four years' course at Johns Hopkins opened Oct. 1, 1893.

The immediate and widespread interest which the medical profession in the United States took, and still holds, in organized postgraduate medical education, and the influence this movement has exercised, is expressed in a review copied from the Boston *Transcript* of Nov. 17, 1914:

> Nor can there be any question that the establishment of the Polyclinic was the chief stimulus to the advance of medical thought and science in the United States: a stimulus that was felt not only throughout this country, in all of whose important cities one or more postgraduate medical schools have been founded, but across the sea, as well, where this system has been adopted in London and other cities.

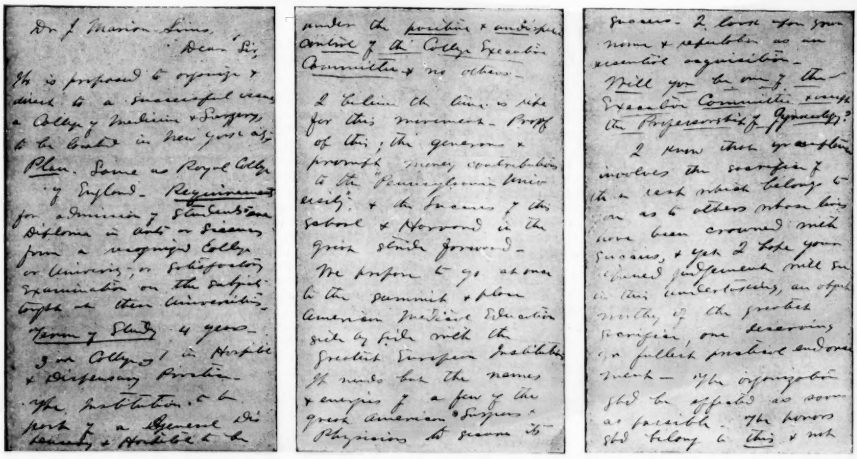
JOHN A. WYETH, M.D., New York.

Formula of the Dakin-Carrel "New Antiseptic"

To the Editor:—This letter is written with the twofold purpose of securing information myself and of sparing others possible annoyance and trouble which I have myself experienced.

The so-called Dakin-Carrel antiseptic solution has been the subject of reference in THE JOURNAL several times. In two places only, directions are given for its preparation, namely, in Queries and Minor Notes, Sept. 25, 1915, p. 1130, and Current Medical Literature, Oct. 2, 1915, p. 1221. In both these places the quantity of the ingredients is given in grams.

In a recently published report on the medicomilitary aspects of the European war, by Fauntleroy, issued by the Navy Department at Washington, there is found, on page 52, some discussion of this antiseptic solution. Here again the quantities are given in grams. But reference is made to an appendix to the report which contains Dakin's original paper in English. Fauntleroy does not give the source of this paper. But in this paper the quantities of the ingredients



Letter written in 1878 by Dr. Wyeth to Dr. Sims.

are given in *grains* with no change in the figures. I quote a paragraph from Dakin's paper, as given in the report, as follows:

Two hundred grains of bleaching powder are added to 10 liters of water, in which 140 grains of dry carbonate of sodium have been dissolved. The mixture is well shaken, and after half an hour the clear liquid is siphoned off from the precipitate of calcium carbonate and filtered through cotton. To the clear filtrate enough solid boric acid is added to render the liquid *acid* with an aqueous suspension of phenolphthalein, but *alkaline* to tournesol. About 25 to 30 grains may be required. The exact amount of boric acid to be added may be conveniently determined by the titration of 10 c.c. of the alkaline hypochlorite solution with a solution of boric acid of known strength (31 grains per liter). In preparing a dilute solution of the hypochlorite as the above, which will contain about 0.5 per cent. NaClO [sodium hypochlorite], an excess of boric acid is unobjectionable, but in the case of stronger solutions an excess must be avoided.

My attention was directed to the discrepancies in the quantities of the ingredients used (difference between grams and grains) by Assistant Surgeon J. G. Wilson of the staff of this institution. A little experimentation showed that if the solution is made up in grams it is higly alkaline both to litmus and to phenolphthalein. Made up in grains the reaction is still more alkaline than is stated, and required about 0.8 gm. of boric acid per liter to neutralize as directed. The boric acid used, however, was from a shelf bottle in the pharmacy and its origin is unknown. This may account for the difference. Further, if made up in grains, will the result be a 0.5 per cent. solution of sodium hypochlorite?

To have published a formula of this character with such wide discrepancies in the directions for its preparation seems to me mischievous. I cannot forbear criticizing Dr. Dakin for his very unscientific jumbling of two systems of weights and measures. He has the right of choice in using one or the other, but hardly both in this way. His use of the two systems in this manner is, I believe, the cause of all the confusion.

C. H. LAVINDER, M.D., Ellis Island, N. Y.
Surgeon, U. S. Public Health Service.

[COMMENT.—H. D. Dakin's original article, published in the *British Medical Journal*, Aug. 28, 1915, p. 318, was quoted verbatim in the abstract given of it on page 1221 of THE JOURNAL, Oct. 2, 1915. The only difference is that the word "gram" was written out in full while it was abbreviated to "gm." in the abstract given. Dakin also presented a communication on the subject at the meeting of the Académie des sciences at Paris, Aug. 2, 1915, which was published in full in the Society Reports of the *Presse médicale*, Aug. 5, 1915, p. 295.

This seems to be a free translation of the article in the *British Medical Journal*, and the figures are the same in each; but instead of writing out "grams," the amounts are given as "200 gr."; "140 gr.," and "25 à 40 gr. d'acide borique." This is the usual abbreviation in French for "gram." On a preceding page an article by another writer says of Javel's water that it is made by diluting with water the Javel extract which contains "96 gr. de chlore par kilogr." Another article refers to a solution of picric acid as "1:20,000 (0 gr. 05 pour 1,000").

Another translation of Dakin's original article was published in the *Presse médicale*, Sept. 30, 1915, p. 377, with a few added items. The figures are the same: "200 gr., 140 gr., and 40 gr." The exact method for using the hypochlorite solution was described by Carrel in the *Bulletin de l'Académie de médecine*, Paris, Oct. 5, 1915, p. 361, certain mechanical preliminaries having been found useful in the field. We have been unable to find the article by Dakin quoted by Dr. Lavinder. None of the foregoing communications from him specify the "tournesol test," and Dakin's recent historical sketch of the subject, summarized in THE JOURNAL, Jan. 8, 1916, p. 150, does not refer to any other articles by him. (See Editorial, THE JOURNAL, this issue, p. 430.)—ED.]

The Digestive Properties of Blood.—The blood is a highly active digestive fluid with a finely adjusted balance between ferment and antiferment, which will soon be better understood, and the solution of this problem will add another triumph to scientific medicine. When the ferment in the blood is suddenly activated immediate death results as is seen in anaphylactic shock. When properly regulated, this delicate mechanism protects against harmful bodies, both those introduced from without and those generated within.—Victor C. Vaughan, *New York State Jour. Med.*, May, 1915.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INSEMINATION AND CONCEPTION

To the Editor:—Please supply me with the accepted opinion concerning the physiology of the menses and their relation to ovulation. Some authors say that conception is least likely to take place ten days or two weeks just prior to the menstrual period. If this is true, how is it explained?

H. W. LONG, M.D., Elmwood, Ill.

ANSWER.—A distinction must be made between conception and insemination. Embryologists believe that the discharge of ova occurs at menstruation; hence conception, the coalescence of an ovum and a spermatozoon, is most likely to occur within the week after menstruation. It is supposed, however, that some graafian follicles may cast out ova at any time. For this reason the rule that conception occurs just after the menses does not always hold good.

Supposing that insemination, the deposition of seminal fluid in the genital tract, takes place before menstruation; as it is possible for spermatozoa to retain vitality in the vagina for at least seventeen days, even through a menstrual period, it is obvious that spermatozoa derived from an insemination preceding the menses may be the agents of a conception, which itself can occur only when an ovum is available; as stated, this is usually just after a menstruation.

CIMEX LECTULARIUS, I. E., BEDBUGS

To the Editor:—Please give me a formula for an insecticide, chiefly for *Cimex lectularius*.

R. L. H., M.D., Woodville, Pa.

ANSWER.—Fumigation and liquid applications are the most effective measures against these pests. Hot water, liberally used, will destroy both eggs and bugs. This is one of the best applications for use on objects that will not be harmed by it. The petroleum oils (benzin, kerosene, etc.) are effective if brushed or sprayed thoroughly into all crevices. Benzin or any similar inflammable substance of course must not be used in a room containing a fire or open flame, and the fumes must be thoroughly dispelled before any light is brought into a room in which benzin has been used. Carbon tetrachlorid has an advantage over benzin in being noninflammable, but its fumes are dangerous to inhale. Rooms in which carbon tetrachlorid has been used should be ventilated thoroughly before being used. Coconut oil also has been recommended as destructive of both the bugs and their eggs; it has the advantage of being noninflammable and nonpoisonous. Mercuric chlorid solution is effective, but should not be used on metal surfaces. The addition of glycerin to the solution has been suggested to prevent the mercuric chlorid from flaking off from the surfaces to which it has been applied, as the solution dries, and sifting about as poisonous dust. Various more or less complex formulas have been published for mixtures of two or more substances already mentioned with alcohol, camphor or nitrobenzene ("oil of mirbane"). The camphor and nitrobenzene serve to disguise the odor of the other constituents. Otherwise these complex mixtures probably possess no advantages over the simpler applications.

Any of these liquids may be applied to crevices with a feather, a fine brush, or an atomizer spray. A convenient device is a wash-bottle with pointed tip and an atomizer bulb attached to the mouth-tube, by which a steady stream may be directed into crevices.

A good way of ridding brass or iron beds of bugs is to place them outdoors or on a concrete floor, pour alcohol into all the crevices, and set fire to the alcohol; a burning newspaper may be passed under the springs. Infested rubbish should, of course, be burned.

Infestation of a room or a building may be so complete that liquid applications are not practicable as a means of destroying the bugs behind wall paper, in cracks in floors, behind wainscoting, etc. In such cases fumigation must be employed. Fumigation by gaseous hydrogen cyanid is effective, but extremely dangerous. It should never be employed except by an expert. Even then it probably should not be used in any part of an occupied building, as cases are

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reported of serious or fatal poisoning of persons who occupied one portion of a building while another portion was being fumigated with hydrogen cyanid gas, supposedly under all proper precautions. Sulphur is both cheaper and less dangerous. Two pounds of sulphur are used to each thousand cubic feet of space. Metal objects, or objects with metallic surfaces, such as picture frames, should be removed from the room about to be fumigated. Lest the burning mass should overflow and set fire to the room, the container in which the sulphur is to be burned (a coal-hod is good) should be placed in a wider pan with water in it. All apertures, keyholes, etc., should be closed. The room should be left closed for twenty-four hours, and should be thoroughly aired before being used again.

The bedbug is said to have at least two insect enemies, the cockroach and the small red ant *(Monomorium pharaonis)*. An instance is related in which infested barracks were entirely cleared of bedbugs through the incursion of enormous numbers of red ants.

LITERATURE ON HYPERTHYROIDISM

To the Editor:—Will you kindly refer me to those numbers of your publication which contain articles on hyperthyroidism?

WILLIAM J. MATHEWS, M.D., Hoboken, N. J.

ANSWER.—A reference to the semiannual "Guide to Current Medical Literature" of THE JOURNAL will reveal numerous references on this subject. The following are a few:

Porter, M. F.: Injection of Boiling Water in the Treatment of Hyperthyroidism, THE JOURNAL, July 12, 1913, p. 88.

Plummer, H. S.: The Clinical and Pathologic Relationships of Hyperplastic and Non-Hyperplastic Goiter, THE JOURNAL, Aug. 30, 1913, p. 650.

Henmeter, J. C.: Hyperthyroidosis of Intestinal Origin, THE JOURNAL, Dec. 13, 1913, p. 2145.

Wilson, L. B.: Relation of the Pathology and the Clinical Symptoms of Simple and Exophthalmic Goiter, THE JOURNAL, Jan. 10, 1914, p. 111.

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"GRIP DON'TS"

We are indebted to Dr. Ravenel, of the Department of Medicine of the University of Missouri, for the following "Grip Don'ts." They are taken from the *University Missourian*, and, according to Dr. Ravenel, were written by Miss Margaret Murphy, a student in the University of Missouri:

Don't laugh at the grip. It is a deadly and a dangerous thing.

Don't forget that the body has its own defensive agents, and therefore,

Don't take a mess of quinin because it is good for malaria.

Don't buy a bottle of "Knockgrip" or "Gripout Pills" because your druggist assures you they cured him.

Don't forget that, if you have a weak spot, such as a "murmuring" heart, a weak kidney or a pet lung, grip will discover it and make abundant use of it.

Don't forget that grip is preventable. Therefore, don't take it; don't let down your physical resistance; don't seek crowded places, and don't forget to flee from sneezing, wheezing persons.

Don't forget that grip is contagious — so don't spread it.

Don't forget to rest long and ardently in bed if it does get you, and don't make light of the extreme prostration that always results after grip has annexed your outlying provinces.

Don't forget that, in the phraseology of Ireland, it is "that spawn of the devil as killed ye off six weeks after ye was completely well of it."

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular, New Haven, March 14-15. Sec., Dr. Charles A. Tuttle, 196 York St., New Haven; Homeopathic, New Haven, March 14. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven; Eclectic, New Haven, March 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

FLORIDA: Homeopathic, Jacksonville, March 10. Sec., Dr. J. B. Griffin, St. Augustine.

IOWA: Des Moines, Feb. 8-10. Sec., Dr. G. H. Sumner, State House, Des Moines.

KANSAS: Topeka, Feb. 8. Sec., Dr. H. A. Dykes, Lebanon.

MAINE: Portland, March 14-15. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MASSACHUSETTS: Boston, March 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

VERMONT: Montpelier, Feb. 8-11. Sec., Dr. W. Scott Nay, Underhill.

WYOMING: Laramie, March 14-16. Sec., Dr. H. E. McCollum, Laramie.

Mississippi October Report

Dr. E. H. Galloway, secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, Oct. 26-27, 1915. The total number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 44, of whom 38 passed and 6 failed. Two candidates were licensed through reciprocity. The following colleges were represented.

College	PASSED	Year Grad.	Per Cent.
Birmingham Med. Coll.	(1914) 77; (1915) 76, 77, 78, 80, 81,	81,	84
Atlanta Medical College	(1915)	79,	80
Chicago College of Medicine and Surgery	(1915)		77
University of Illinois	(1913)		84
Tulane Univ. of Louisiana	(1892) 91; (1912) 84, 85; (1914)		81
Jefferson Medical College	(1914)		89
Meharry Medical College	(1915)	75,	81
Memphis Hosp. Med. Coll.	(1911) 81; (1912) 80; (1913)		76
University of the South	(1900)		88
Univ. of Tennessee	(1914) 80, 81; (1915) 77, 80, 81, 86,	88,	88
Vanderbilt University	(1912) 80; (1915) 75, 80, 81,	83,	84
Baylor University	(1915)		93
	FAILED		
Birmingham Medical College	(1914)		73
Meharry Medical College	(1912);* (1913) 68; (1915)	66,	71
University of Tennessee	(1915)		65

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Atlanta School of Medicine	(1912)	(1913)	Georgia

* Did not complete the examination.

Florida Homeopathic November Report

Dr. J. B. Griffin, secretary of the Board of Homeopathic Medical Examiners of Florida, reports the written examination held at Jacksonville, Nov. 12, 1915. The total number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 4, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Med. Coll. and Hosp., Chicago	(1893) 75; (1909)		76
Hering Medical College, Chicago	(1913)		91
Hahnemann Medical College, Philadelphia	(1878)		80

Arizona October Report

Dr. John Wix Thomas, secretary of the Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, Oct. 5-6, 1915. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 10, of whom 4 passed, including 2 osteopaths, and 6 failed, including 1 osteopath and 2 drugless practitioners. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles	(1914)		86.7
University of Illinois	(1914)		77.5
	FAILED		
College of Physicians and Surgeons, San Francisco	(1913)		71.8
Tulane University of Louisiana	(1905)		61 9
University of Oklahoma	(1912)		66.2

Arkansas November Report

Dr. T. J. Stout, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, Nov. 9-10, 1915. The total number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 14, of whom 10 passed and 4 failed. Thirteen candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1915)	83.9
Keokuk Medical College, College of Phys. and Surgs.	(1908)	76.2
University of Louisville	(1891)	66.4*
Missouri Medical College	(1899)	63.6*
Meharry Medical College	(1915)	75.2
University of Tennessee	(1915)	76.2, 79.1, 82
Vanderbilt University	(1915)	88
University of Virginia	(1915)	87.1

FAILED

College of Physicians and Surgeons, Little Rock	(1910)	50.8
University of Arkansas	(1912)	67.8
Meharry Medical College	(1912)	64.6
Vanderbilt University	(1913)	71.8

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Birmingham Medical College	(1911)	Mississippi
George Washington University	(1913)	Virginia
Chicago College of Medicine and Surgery	(1914)	Illinois
Illinois Medical College	(1900)	Kentucky
University of Louisville	(1915)	Kentucky
Tulane University of Louisiana	(1898) Oklahoma; (1903) (1913) (1914)	Louisiana
St. Louis College of Physicians and Surgeons	(1898)	Oklahoma
University of Nashville	(1900)	Oklahoma
University of Tennessee	(1900) Kentucky; (1914)	Mississippi

* Credit allowed for years of practice.

The following questions were asked:

PRACTICE

1. Name four types of malarial infection, and give treatment of remittent fever. 2. Give the etiology and treatment of acute tonsillitis. 3. Give the treatment for habitual constipation. 4. Differentiate between pleurisy with effusion and acute lobar pneumonia, giving treatment of the latter. 5. Give the treatment of facial erysipelas. 6. How would you make an early diagnosis of tuberculosis? 7. Give the treatment of ophthalmia neonatorum. 8. Give the treatment of convulsions caused by nephritis. 9. Give the medical treatment of ulcer of the stomach. 10. Give the symptoms and treatment of pellagra.

THERAPEUTICS

1. How do the following drugs act in intermittent malarial fever: quinin, methylene blue and eucalyptus? 2. What remedies should be used for hemorrhage from mucous surfaces? 3. What are the conditions in cystitis that contraindicate the use of alkaline diuretics? 4. What drugs would you use hypodermically to stimulate the heart; to produce emesis; to control hemorrhage? 5. Give the therapeutic application of drugs in the different stages of pneumonia. 6. Mention the remedy which will arrest the secretion of milk, and state how it should be employed. 7. What are the therapeutic uses of glycerin? 8. Describe the therapeutic uses and dangers of chloral hydrate. 9. Differentiate the physiologic effects of the gastric juice and on the urine of the administration of potassium bicarbonate before and after meals. 10. What are the therapeutic uses of tartar emetic?

MATERIA MEDICA

1. (*a*) What are antiseptics? (*b*) Disinfectants? (*c*) Give an examnle of each. 2. Define a laxative and tell how it acts. 3. Name the alkaloids of nux vomica. 4. (*a*) Give the properties of chloroform. (*b*) Name several preparations of chloroform. 5. What evils may result from chemical incompatibility in prescriptions? 6. (*a*) What is the source of digitalis? (*b*) Give symptoms of digitalis poisoning. 7. (*a*) What is the source of ergot? (*b*) Give physiologic action of ergot. 8. (*a*) Name six official preparations of mercury. (*b*) Give briefly the properties, uses and dose of each. 9. Name the principal alkaloids of Papaver somniferum. 10. Classify the following drugs according to their physiologic action: sodium chlorid, sodium hydroxid, potassium citrate, adeps lanae hydrosus, epinephrin, fel bovis (ox gall), and ferri carbonas.

PATHOLOGY

1. Give analysis of the urine of patients affected with autointoxication. 2. A persistent low blood pressure is pathognomonic of what class of diseases? 3. In what diseases do we find arteriosclerosis, and to what conditions does it predispose? 4. What is the significance of an absence of chlorids in the urine? 5. Explain cause and describe minutely the formation of an epithelioma. 6. Explain the formation of pus. 7. Define leukemia, and discuss briefly the clinical phases in its progress. 8. What pathologic condition is induced by chronic infections of: the nose, throat, teeth or their accessory sinuses? 9. What is the pathologic significance of vertigo? 10. (*a*) When do secondary and tertiary symptoms of syphilis appear? (*b*) What is the significance of nocturnal headaches in syphilis?

BACTERIOLOGY

1. (*a*) Give method of blood staining. (*b*) What is the normal blood count, and how is it affected by disease? 2. (*a*) What is the value of Widal's test for typhoid fever? (*b*) At what stage of the fever is it most reliable? 3. What general conditions predispose to bacterial infections? 4. (*a*) Give general method of procedure for staining bacteria. (*b*) What are counterstains? 5. (*a*) What is the most effective method of sterilization? (*b*) How are culture mediums sterilized? 6. (*a*) Describe in detail the process of finding tubercle bacilli in the urine. (*b*) Give method of determining the location of the infection. (*c*) From what other bacilli would you have to differentiate them? 7. Name some of the diseases of which the pneumococci may be the chief etiologic factor. 8. What culture-medium is essential in the growth of the organisms producing the following diseases: cerebrospinal meningitis, gonorrhea and diphtheria? 9. Mention five general or systemic diseases produced by micro-organisms, and in connection with each give name and chief morphologic characteristic of organisms concerned. 10. What is the cause of difference in the virulence of diphtheria?

OBSTETRICS

1. Into what stages is labor divided, and where do these stages begin and end? 2. Give diagnosis and management of a breech presentation. What are the dangers? 3. Give indications for the use of forceps, internal podalic version and cesarean section. 4. What are the causes of hyperemesis gravidarum, and the clinical features and the treatment of the condition? 5. What is placenta praevia? Name its causes, varieties, symptoms, dangers and treatment. 6. Eclampsia: etiology, premonitory symptoms and treatment? 7. Describe the delivery of the placenta after the method of Credé. 8. Give two indications for the induction of premature labor, and describe one method of performing it. 9. What are the symptoms of inevitable abortion, and how should a case be managed? 10. How would you manage a case of primary postpartum hemorrhage?

ANATOMY

1. Name the articulations of the frontal and occipital bones. What bones articulate with the radius? 2. Name divisions of the vertebral column, giving number of bones in each division. What are distinguishing characteristics of cervical vertebrae? 3. What are the relations of the brachial artery? Name its branches. 4. What spinal nerves enter into the formation of the anterior crural nerve, and what muscles does it supply? 5. Describe the origin, course and distribution of the renal arteries. 6. Name the cavities, openings and valves of the heart. 7. Name the coverings of a femoral hernia. 8. Give origin and insertion of the following muscles: biceps, pectoralis minor and popliteus. Give blood and nerve supply of each. 9. Name the arteries and nerves which supply the duodenum. What veins drain this region? 10. What structures are severed in an amputation about the middle third of the thigh?

SURGERY

1. Define inflammation, septicemia and pyemia. What organs are most prone to pyemia? 2. What general term denotes control of hemorrhage? State all the methods which may be used to stop the flow of blood from a wound. 3. What would be the proper treatment for backward dislocations of the femur at knee, with rupture of the popliteal artery? 4. Give causes, symptoms, diagnosis and treatment for acute suppurative osteomyelitis. 5. Define shock, and state how you would treat same. 6. If called to a patient with a compound fracture of leg in lower third which had been produced by kick of horse in a barnyard, state in detail how you would treat such case. 7. Define ankylosis; give varieties; also describe a surgical method for restoration of joint function in case of bony ankylosis of the knee joint. 8. Give points of differential diagnosis between pyloric (or duodenal ulcer) and cholecystitis. 9. Give varieties of ileus, and state some of the causes of each. 10. Give symptoms, diagnosis and treatment of stone in ureter.

HYGIENE

1. Name four points in personal hygiene to prevent acquiring or imparting tuberculosis. 2. Name some special precautions a child should observe at school in order to avoid contracting disease. 3. What is the hygiene of pregnancy, and what advice would you give a pregnant woman from a hygienic standpoint? 4. Give prophylaxis of filth diseases. 5. What are the dangers from (*a*) the house fly? (*b*) The mosquito? (*c*) How would you exterminate them from a community? 6. (*a*) Name the chief sources of contamination of drinking water. (*b*) Give several methods of purifying drinking water. 7. Name some diseases that are communicated to man through cow's milk. 8. Name all diseases due to micro-organisms. (*b*) Methods of transmission. 9. What hygienic precautions should be employed around a patient with scarlet fever and diphtheria? 10. What necessary precautions should be taken to insure healthy sleep?

PHYSIOLOGY

1. (*a*) Give composition of blood; (*b*) function of blood as a whole; (*c*) red cells; (*d*) leukocytes. 2. Trace the course of the blood, (*a*) complete cycle, (*b*) in adult, (*c*) in fetus. 3. Give the causations and describe the occurrence of dyspnea. 4. Where and how are bread and butter digested? 5. Compare the work done by the liver on a protein diet with that done on a carbohydrate diet. 6. What are the most prominent differences between the composition of the blood plasma, and that of the urine? 7. Why is the lymphatic system so essential to the human body? 8. Name parts of (*a*) the small intestines, (*b*) large intestines. Give name and location of the glands found in the small intestines. 9. How is the temperature of the body regulated and sustained? 10. What is the function of the medulla oblongata?

CHEMISTRY

1. (*a*) What is an element. (*b*) Name five with symbols. 2. (*a*) Give two methods of preparing oxygen. (*b*) Give equation of one method. 3. What is an acid, a salt, a base? Give example of each. 4. Name five elements in the halogen group. 5. Describe Marsh's test for arsenic. 6. What do you understand by specific gravity? 7. Complete the following: $NaCl + H_2SO_4 = ?$ $2n + HCl = ?$ $AgNO_3 + HCl = ?$ 8. Describe Fehling's test for glucose, and explain chemical reaction. 9. What is the reaction between granulated sugar and Fehling's solution? 10. Give the various steps in making a urinalysis.

GYNECOLOGY

1. (*a*) Name two causes of sterility in the male. (*b*) Name three of sterility in the female. 2. Name the objective signs of extra-uterine pregnancy. 3. Name two most common causes of dysmenorrhea. 4. What symptoms of cystitis are first noted? 5. Name the indications for the use of uterine tampons following abortion. 6. Name three varieties of fibroids of the uterus. 7. Name three etiologic factors in acute endometritis. 8. Give treatment for inoperable carcinoma of cervix. 9. Would you remove in toto an ovary with a small cyst? 10. What are the objections to ventral fixation of uterus?

Book Notices

TEXT-BOOK OF SURGICAL OPERATIONS, ILLUSTRATED BY CLINICAL OBSERVATIONS, FOR PHYSICIANS AND STUDENTS. By Prof. Fedor Krause, Directing Physician, Augusta Hospital, Berlin, and Emil Heymann, M.D., Chief Physician, Augusta Hospital. Translated and Edited by Albert Ehrenfried, A.B., M.D., F.A.C.S., Assistant Visiting Surgeon, Boston City Hospital. In six volumes. Volume I. Cloth. Price, $6. Pp. 267, with 294 illustrations. New York: Rebman Company, 1915.

The principal feature of this work, which the authors believe should distinguish it from other operative surgeries, is that the various operations as described are from actual cases, the clinical histories of which are detailed. As the end-results of the operations are frequently shown by illustration as well as noted in the history, an additional clinical value is given to the work over the usual textbook on operative surgery which deals exclusively with the mechanical part. The opening chapters, as usual in works of this kind, are on general subjects, such as the preparation of the patient, anesthesia and after-treatment. There is nothing specially new or unusual to note in these chapters, except that there is almost as much space devoted to the subject of local anesthesia as to all other methods, which is an indication of the increased popularity of this method of inducing anesthesia for surgical purposes. In the chapter on local anesthesia, we find: "As the result of reduced or practically suspended circulation in the injected limb, an early absorption of the drug takes place, etc." This is evidently an error, as the suspended circulation would greatly delay the absorption of the drug, as is correctly stated further on. Concerning the operations, the present volume deals only with operations on the face and its accessory cavities, including the orbit and the ear, and on the trifacial nerve and gasserian ganglion. The description of the operation is good, as are also the illustrations, many of which are partly colored.

DISEASES OF THE ARTERIES, INCLUDING ANGINA PECTORIS. By Sir Clifford Allbut, K.C.B., M.A., M.D., Regius Professor of Physic in the University of Cambridge. Two volumes. Cloth. Price, $9 per set. New York: The Macmillan Company, 1915.

These volumes are made up of articles and addresses which have been published before. There has been revision and rearrangement, however, so that the chapters follow in not unnatural sequence and the subjects are treated in a fairly complete manner. Yet, as the author himself recognizes in his preface, "there is something of the discursive about the work, which has rather the form of a string of dissertations than of an orderly monograph." If we try to read the book connectedly and as a whole we become conscious of a good deal of repetition. In a single lecture, address or essay this is not noticed. So one may, perhaps, better enjoy the books by reading them as one would a series of essays, a chapter at a time with a rest of days or weeks before reading another.

The author's unusual command of English and his charm of style are noteworthy. We feel at times that his ease of expression, his full vocabulary and his wealth of rhetorical resources lead him to pen sentences for the mere pleasure of writing them rather than because they add to the real scientific content of the book. He is particularly happy and forceful in argumentation, and has the schoolman's delight in showing the weakness of a rival's logic or the dilemma into which his antagonist has fallen. While the reading of these pages is enjoyable, we must admit that when controversy dominates one chapter after another it becomes a little wearisome. We may illustrate what we mean by referring to his constant allusions to "coronarians," and to the absurdity of using the term "false angina" or "pseudo-angina," though we read later, with surprise, his own description of "mock angina." But with such brilliant writing we may forgive repetition, the riding of hobbies, and some inconsistencies in argument, even though at times we might wish for more of cold facts—such, for example, as those of post-mortem evidence—rather than logic or opinion.

The volumes are in three parts, on arteriosclerosis, aortitis and angina pectoris. We need not repeat here the author's views on these conditions, for they are well known. He makes a strong case for the aortic rather than the coronary origin of the pain of angina pectoris, though he admits that the underlying pathology is not yet fully known (ii, 219) and that anginal pain is not alone aortic in origin (ii, 462).

For delightful reading full of suggestive facts and theories we may recommend these essays. The author expresses the hope that while this book, the fruitage of many years of honest labor, may have the mellowness of age, it will not be found unsound. Assuredly the fruitage is sound, and it has, moreover, the aroma and texture that mark its quality as of the finest.

MARIE TARNOWSKA. By A. Vivanti Chartres. With an Introduction by Prof. L. M. Bossi of the University of Genoa. Cloth. Price, $1.50 net. Pp. 303. New York: The Century Company, 1915.

This biography was written by Mrs. Anna Vivanti Chartres at the suggestion of Professor Bossi of Genoa. Daughter of an epileptic mother, and herself a pronounced neurotic from the time of puberty, Marie Nicolaievna early began having hystero-epileptic attacks whenever she desired to win her point with her stern, high-tempered, autocratic father. She admits feigning epileptiform seizures in order to secure the cooperation of her mother for her elopement and marriage to the young roué of Kief, Vasili Tarnowsky. Given her hereditary taint, given the maelstrom of debauch into which her husband was willing to drag her, what wonder is there that the frail moral fiber in her should have snapped? As long as her socio-economic position remained secure, Marie's vagaries were largely confined to risqué flirtations. Only when privation knocked at her door did she begin to use her fatal gifts of fascination in order to benefit herself financially and socially. Once entangled in the cleverly laid meshes of the arch fiend Prilukoff, Marie Tarnowska, true to Slavic fatalism, ceased to resist, and descended rapidly from one moral abyss to another. One cannot help feeling that Professor Bossi came under the spell of this fascinating, utterly irresponsible seductress of men; he would have us believe that simple medical or surgical treatment could restore his patient to "complete sanity or moral well-being." A close perusal of the book forces one to the conclusion that heredity and environment have conspired to make of its unfortunate heroine (if such a term be permissible), a chronic psychopath. The statement of Mme. Vivanti Chartres to the effect that Marie Tarnowska "is and has been for some years past suffering from slow blood poisoning . . . which . . . causes periodic cataleptic seizures that imperil her life" is a fanciful one. She has undoubtedly misquoted the medical authorities to whom she refers in her preface. The book is fascinating and well worth reading. It portrays a society—small but existent—familiar to one who has sojourned in any of the fashionable watering places or winter resorts of old Europe.

CHARACTER AND TEMPERAMENT. By Joseph Jastrow, Professor of Psychology, University of Wisconsin. Cloth. Price, $2.50 net. Pp. 596. New York: D. Appleton & Co., 1915.

This is the first of a series of books to provide readily intelligible surveys of selected aspects of the study of mind and of its applications. The book before us is a study of character and temperament from the point of view of a psychologist occupying a professorial chair. It is by no means easy reading; indeed, to read the author's stately sentences and to grasp his inexorable logic is splendid psychologic discipline, and makes for both character and temperament. The volume contains much that needs rereading and profound study. As our book market is flooded with literature of the light kind, it is refreshing to peruse a work requiring close attention. The author is a master not only of psychology, but also of the art of presenting it to nonpsychologists. While the ordinary reader accustomed to the candy style of magazines and newspapers may find the book somewhat of a hard nut to crack, the medical man will have little trouble in following the author through the maze of psychologic rhetoric necessarily a part of any work on psychology.

Medicolegal

State Not Liable for Death of Insane Person Committed to State Hospital

(Smith vs. State (N. Y.), 154 N. Y. Supp. 1003)

The Supreme Court of New York, Appellate Division, Third Department, affirms a determination of the board of claims, dismissing the claim filed in this case for the death of a man who, after having been adjudged insane and committed to the Manhattan State Hospital, escaped from the hospital, his body being found in the East River about two weeks later. The court says that the claimant contended that there was presented in this case for the first time to any court the question whether the same rule of exemption of charitable and state institutions from liability for the neglect of their attendants applies to a person of unsound mind, who has been made an involuntary beneficiary of such an institution by the order of the court, as applies to a person of sound mind who has voluntarily accepted the benefits of the institution. This man was committed as an indigent insane person to a charitable institution maintained by the state in its governmental capacity, at its expense, for the purpose of caring for and treating unfortunate persons of unsound mind. His commitment to the state hospital was a right conferred by statute, and was indispensable both for his welfare and for the welfare of the community, and the court thinks that an implied waiver of liability of the hospital for the negligence of its physicians and attendants may be assumed in such a case, as well as in the case of an indigent sane patient voluntarily committed to a charitable institution. Moreover, the claimant introduced no evidence whatever showing the absence of proper care on the part of the hospital attendants to prevent the man's escape, but relied on the assumption that the escape was itself prima facie evidence of negligence on the part of the hospital authorities, and that it threw on the state the burden of showing the manner of such escape, and that the escape did not occur through any negligence on the part of the hospital authorities or attendants. But there was not in the record such legal evidence as would establish liability against an individual or a corporation in a court of law or equity, assuming that such individual or corporation could be held liable for the negligence of its servant. The mere fact that the legislature allowed the claimant to submit the claim to the board of claims for determination was not a concession of the validity of the claim. There was nothing whatever in the record indicating that the hospital authorities had notice of a suicidal tendency, or in fact that it existed. The court thinks that the mere fact of the escape did not raise a presumption of negligence on the part of the hospital authorities in selecting competent attendants, or of negligence on the part of the attendants resulting in the man's escape.

Not Liable for Alleged Loss of Sponge

(Ruble et al. vs. Busby (Idaho), 149 Pac. R. 722)

The Supreme Court of Idaho affirms a judgment in favor of the defendant, who, in performing an operation on a woman to remove the ovaries, fallopian tubes and vermiform appendix, it was alleged negligently permitted a gauze or cheesecloth sponge to remain in the abdomen of the patient, which directly resulted in her death. The court says that the defendant offered evidence showing the exercise of the care and skill which ought to be exercised by an operating physician in a case like this. He testified that he found the intestines and organs in that part of the abdomen all bound together by adhesions; that, when he was about to close the incision, on his attention being called to the nurse having reported a sponge missing, he stopped and went carefully over every part of the abdomen and satisfied himself positively that there was no sponge there. The operation was performed on the morning of the fifteenth of the month, and the evidence showed that the patient continued to do fairly well up to the twenty-fourth, when the defendant was unceremoniously dismissed from the case and three other physicians took charge of it. These three physicians, having learned about a missing sponge, on the morning of the twenty-fifth performed a second operation, and two of them made five distinct searches for the sponge, before one of them claimed that he found it. But it was sufficient to say that the defendant testified that after the nurse reported the sponge missing he made a most careful examination, and satisfied himself positively that there was no sponge there, while it further appeared that no sponge was used in the abdomen unless it had forceps, about 15 inches in length, attached to it. The jury was called on to determine from the evidence whether the proximate cause of the death of the patient was the negligence of the defendant in the performance of the operation, and it devolved on the plaintiffs to prove the material allegations of the complaint by a preponderance of the evidence, and the court correctly instructed the jury that in order for the plaintiffs to recover they must satisfy the jury by a preponderance of the evidence as to the justice of their claim; that they must produce evidence in support of the material allegations of the complaint, which, in the judgment of the jury outweighed the evidence of the defendant. In other words, if the testimony was evenly balanced, they must find for the defendant, and the plaintiffs could recover only in case their testimony outweighed that of the defendant. One of the allegations of the complaint was that the defendant negligently and carelessly left in the abdomen of the patient a certain sponge which caused her death, and it was necessary for them to prove that the result of the alleged negligence was the cause of the death of the patient in order to recover in this case. On a careful review of the instructions given, the court is satisfied that they fairly covered the case made by the pleadings and the evidence. It was apparent from the evidence in the case that the patient, after having been operated on, and her intestines found to be one adhesive mass, and the adhesions separated, and ten days after another operation was performed, when five careful searches were made through her intestines for a sponge that was supposed to be lost, and her intestines were found at that time to be again an adhesive mass, the adhesions being again broken up, the jury were fully justified in finding under such evidence in favor of the defendant.

Undertaking of Physician and Duty of Patient

(Merrill vs. Odiorne (Me.) 94 Atl. R. 753)

The Supreme Judicial Court of Maine grants the defendant's motion for a new trial in this case where a verdict was rendered against him for damages resulting from alleged negligence on his part in the reduction and treatment of a fractured limb. The court holds that a physician contracts with his patient that he has the ordinary skill of members of his profession in like situation, that he will exercise ordinary or reasonable care and diligence in his treatment of the case, and that he will use his best judgment in the application of his skill to the case. The physician is not an insurer. He does not warrant favorable results. If he possesses ordinary skill, uses ordinary care, and applies his best judgment, he is not liable even for mistakes in judgment. But in cases of this nature a duty devolves on the patient. In an extensive note to be found in the case of Gillette vs. Tucker, 93 Am. St. Rep. at page 662, on the authority of cases there cited it is held that it is the duty of a patient to follow the reasonable instructions and submit to the reasonable treatment prescribed by his physician or surgeon. If he fails in his duty, and his negligence directly contributes to the injury, he cannot maintain an action for malpractice against his physician or surgeon, who is also negligent in treating the case. In the absence of any exceptions to the instructions of the presiding justice, this court must assume that these principles of law were correctly stated to the jury. It is the opinion of the court, however, on a careful examination of the evidence, that the jury did not give due consideration to that part of the testimony which related to the conduct of the plaintiff and its effect in producing the unfortunate results from which he now suffers. Hence the verdict was so erroneous as to demand an affirmative finding on the motion of the defendant for setting aside the verdict and granting a new trial.

Miscellany

Report of Committee Appointed to Study the Dangers of Repeated Serotherapy

The committee included Achard, Chantemesse, Marfan, Necter, Siredey and three others. It was appointed by the Société médicale des hôpitaux de Paris to study whether the danger of anaphylactic phenomena is sufficiently imminent to render it inadvisable to apply serotherapy oftener than a single time. The report is published in the *Bulletins* of the society, 1915, xxxix, 1076, and fills nearly twenty pages, discussing in turn experimental research on the subject of reinjections, clinical experience and the immediate and remote accidents that have been observed in man. The report also discusses reinjections made by the subcutaneous, intravenous and intraspinal routes, summarizing all the known mishaps and discussing the treatment. Two cases are on record of sudden death after reinjection of antiplague serum or diphtheria antitoxin (Richet and Dreyfus), and the first is not conclusive. The five conclusions of the report are that the accidents which have been signaled after subcutaneous reinjection are extremely rare and occur only under very exceptional circumstances. The danger of anaphylactic accidents is so remote that it should not be regarded parallel with the risks to which the patient is exposed by abstention from the needed subcutaneous serotherapy. Intravenous reinjections are not needed in ordinary practice; they should be reserved for special cases, such as bubonic plague and severe tetanus. The indications for intraspinal reinjections will become more and more exceptional if meningitis is treated properly from the first with massive and repeated doses. One should not hesitate to reinject the serum in case of relapse with meningococci in the lumbar puncture fluid. In any event, a physician can never be reproached for reinjecting the therapeutic serum in prophylaxis or treatment.

Local or general anaphylactic phenomena occur regularly in animals, but in man such accidents are very rare, they occur without any regularity, they are not so severe as in animals, and they seem to depend on an individual hypersusceptibility. Subcutaneous reinjections are generally harmless. General accidents after intravenous or intraspinal reinjections are very rare and inconstant, but still, as they are liable to occur, it is well to be prudent. When a possible predisposition is afforded by severe intoxication or infection, convalescence from a microbian disease, tuberculosis, a predisposition to urticaria, asthma, hay fever, and those incommoded by odors, it is wise to inject the first few cubic centimeters of the serum very slowly and gradually—whether it is a primary injection or a reinjection—and stop at the slightest incident, waiting for an hour before continuing the injection. By this means the susceptibility is tested and all serious accidents are avoided. Injecting the serum very slowly is also always advisable in intravenous or intraspinal injections or reinjections. This precaution is generally sufficient in all injection technic. If the intravenous or intraspinal injection is not urgent, it might be preceded by an intravenous or subcutaneous injection of a small amount of the serum (Besredka's method), injecting the rest of the serum an hour later, but always very slowly.

Whooping Cough

The whooping cough clinic established in New York by the municipal health department in August, 1914, has made a report of its first year of work, which is summarized in the November *Monthly Bulletin* of the department of health. The total number of patients treated was 1,397, and over 12,000 treatments were given. The plan of treatment has finally resolved itself into a treatment by a vaccine, supplemented by an antipyretic mixture and cod liver oil emulsion, the latter to be used in cases in which there is considerable bronchitis. The vaccines have been prepared in the laboratory of the board of health, and under the use of this agent the paroxysmal stage of the disease has been limited on an average to a duration of about three weeks. Prophylactic immunization has been practiced in forty-five cases with no disease among these children. Four out of eleven exposed patients treated with the antipyretic alone as controls contracted the whoop, and eight out of thirty-six persons not treated became infected. The method of treatment consists in giving three or four subcutaneous injections, one every other day, and following this by the antipyretic mixture for a period of three or four days. The whoop usually disappears between the third and fourth injections; if it does not, another course may be given. The initial dose for children less than 1 year of age is 250 million organisms, doubled every second day. Children over 1 year old receive an initial dose of 500 million and adults 1 billion. The prophylactic dose consists of three injections of 500, 1,000 and 2,000 millions at three-day intervals. It is said that the establishment of the whooping cough clinic is warranted, no matter what method of treatment is employed, and several other clinics will probably be established. Many private physicians have asked consultation with the physician in charge of the whooping cough clinic.

Society Proceedings

NEW YORK ACADEMY OF MEDICINE

Regular Meeting, held Jan. 6, 1916

The President, DR. WALTER B. JAMES, in the Chair

Importance of Syphilis Often Unsuspected, in the Production of a Number of Apparently Unrelated Disorders

DR. LEWELLYS F. BARKER, Baltimore: In seven cases of syphilis, the existence of the disease was denied and the patients presented symptoms respectively of bronchiectasis following pneumonia; sacculated aneurysm; general arteriosclerosis; indolent swelling of the tonsil; epilepsy; sudden loss of vision in one eye; diabetes mellitus with aphasia, and general atherosclerosis. The Wassermann test was positive in every one of these cases, and every one of the patients improved under antisyphilitic therapy. There are eighteen conditions in which it is especially important not to overlook the possibility of an existing syphilis. There are: long continued fever otherwise unexplained; obscure nervous cases, both functional and organic; chronic laryngitis; tracheal and bronchial stenosis; bronchiectasis and unexplained infiltrations of or masses in the lungs and pleura; aneurysms; aortic insufficiency, especially when unaccompanied by other valvular lesions; heart block and other cardiac arrhythmias; arterial and venous thrombosis; certain grave anemias; paroxysmal hemoglobinurias; indolent nodules in the tongue and tonsils; enlargements of the liver and spleen; strictures of the rectum; atypical joint diseases, and especially obscure diseases of the spine; thickening of, or nodules in the bones, especially when accompanied by nocturnal pain; unusual forms of renal disease; chronic orchitis, or nodules in the testes; repeated miscarriages without apparent cause; stillborn children, and disorders of metabolism and of internal secretion, especially in bizarre cases. Among the many conditions often believed to be syphilitic in origin, and in which sometimes it has to be admitted that a syphilitic factor is present, but which often occur in the entire absence of syphilis, are cerebral apoplexy; high blood pressure cases; contracted kidneys; multiple sclerosis; certain suspicious lesions, especially those due to sporotrichosis, or blastomycosis of the bones, lungs or subcutaneous tissue; psychoneurotic states accompanied by syphiliphobia, and exophthalmic goiter. The more my experience grows, the more am I inclined to take as a diagnostic aphorism, "When in doubt have a Wassermann test made; when not in doubt, still have a Wassermann test made."

Syphilis in General Surgery

DR. EDWARD MARTIN, Philadelphia: The lesions of syphilis, unlike all other infections, are so consistently, effectually and promptly bettered or cured by medication, that with

some exceptions, operative measures constitute a species of malpractice. Hence to the surgeon, the questions of the incidence and diagnosis of syphilis are major ones. A clinical examination of the West Point cadet corps failed to show a single case of syphilis, but a Wassermann test indicated a 5 per cent. incidence, from which it seems clear that from 2 to 5 per cent. of the commissioned personnel of the army are syphilitic at the time they enter the service. Since applicants to West Point are practically picked men, the prevalence of syphilis among college men in general is probably slightly greater than it is among West Pointers. From a Wassermann survey of the candidates for enlistment, Vedder concludes that about 20 per cent. of the young adult male population from which the army is recruited is affected with syphilis. Out of 100 cases taken at random from the medical wards of the University of Pennsylvania Hospital, there was a positive Wassermann reaction in nineteen, and of these only two gave clinical evidence of syphilis. These patients entered the hospital for the cure of diseases ranging from cholecystitis, renal sclerosis, gastric ulcer and tuberculous pyelonephritis to goiter, and most of them exhibited neither characteristic history nor clinical signs of specific disease.

With reference to diagnosis, the surgeon asks two questions: 1. Is the lesion under consideration syphilitic? 2. If not, has an underlying syphilis a distinct influence on its progression or on the outcome of surgical intervention undertaken for its cure? If these two questions can be answered in the negative, the query as to whether the patient has or has not syphilis is of minor immediate moment, though it is true that the spirochete, exhibiting a special predilection for the perivascular tissues and the heart muscle, by the devitalizing effect consequent on impaired nutrition, predisposes to all other infections, to neoplasms and to slow ulcerative processes. Not infrequently chancre, occupying other than its usual habitat, is regarded as epitheliomatous, and excision is ordered. This is particularly true of digital chancre as it affects medical men; it is painful, persistent and atypical in appearance, and not until it has been cut, curetted, cauterized and otherwise stimulated to wider growth, and usually not until the axillary nodes have been excised by a sympathetic colleague, does the patient come to "the man higher up," by which time a positive Wassermann and a secondary eruption establish the diagnosis, which should have been made by microscope weeks before. The major difficulty experienced by the surgeon is in the distinction between gumma and malignant tumor, a difficulty greater than ever before, since the profession is waking up to the need of early intervention, and differential diagnosis of tumor cases in the early stage of development is impossible.

Concerning bone swellings, the Roentgen ray, even at the early stage, enables the determination with a fair degree of certainty of the syphilitic, the tuberculous or the neoplastic nature of the enlargement. But no such help is afforded in tumor of the soft parts. Here the method of choice is microscopic examination, wide excision when it involves neither crippling nor gross deformity, or laboratory tests and the effect of vigorous antisyphilitic treatment. When the lesion is surely nonsyphilitic, though the Wassermann test is positive, the question arises as to supplementing the surgical procedure by specific treatment; or, if it be accepted that a positive Wassermann is proof of active spirochetes and that a harmless course of treatment will either quiet or kill them, would any but an affirmative answer seem logical? A reason for not so answering and acting is based on the absence of gross functional or structural changes.

Syphilis in Neurology

DR. JOSEPH COLLINS: It is generally believed that certain diseases of the nervous system with definite unvarying lesions have their sole origin in syphilis; these are tabes, general paresis and most instances of cerebral and spinal endarteritis. With all the diagnostic means at our disposal, these offer little or no difficulty of early recognition, and their successful treatment rests on their early detection. There are, however, many other diseases of the nervous system whose origin is in syphilis which are not attended with pathognomonic subjective or objective symptoms. These are far more numerous than the rank and file of the profession suspect. They parallel in their clinical display nearly every organic disease of the central nervous system and many of the functional ones. I have tabulated 245 cases that have been diagnosticated syphilis of the nervous system, and distributed them under the various diseases to which they conformed clinically. This list justifies the statement that syphilis is of great importance in the production of a number of apparently unrelated disorders, and that syphilis of the nervous system may display itself in the guise of nearly every functional and organic disease of the nervous system that pursues a subacute or chronic course. When such conditions are due to syphilis, they are more amenable to cure than when due to other causes. This fact is the chief incentive to the detection of their origin. One should suspect syphilis as the cause of disease of the nervous system in every instance in which the cause is not obvious. One must make the diagnosis conclusively of syphilis of the nervous system in every instance in which a positive reaction is found on more than one occasion and by different observers in the blood serum and spinal fluid. In the case of a negative laboratory report, the diagnosis of syphilis is not made unless at least one of the pathognomonic symptoms exists. Of these the most important is the pupil of irregular outline which does not respond to light. In a general way it may be said that the occurrence of headache, fugitive or persistent pains in the neck, the extremities, the trunk, stiffness, paresthesia, disorder of urination, transient ocular palsy or mental depression without obvious attribution should suggest syphilis. Yet it would be absurd to say that any or all of these symptoms were so suggestive of syphilis of the nervous system that the diagnosis should be made. In 465 cases of suspected syphilis, the Wassermann reaction was positive in 150. Serologic studies are of enormous importance in all cases in which there is any suspicion of involvement of the meninges. There are frequently many difficulties in determining the diagnosis in pseudoparesis and general paresis, disseminated cerebrospinal syphilis and insular sclerosis, syphilitic myelitis, syphilitic muscular atrophy, cerebrospinal meningitis in the guise of syringomyelia, syphilitic root neuritis and acroparesthesia, neurasthenia, *redivivus*, insomnia, epilepsy, neuritis and polyneuritis, shivering attacks, and choreic movements and rheumatism dependent on syphilis of the nervous system which are best brought out by citing individual cases. Multiplicity of symptoms has been regarded as a striking feature of syphilitic disorders, but this allegation is not founded on fact. Many patients who furnish the foundation for this contribution had only one or two symptoms, or at least that was all they related. When the symptoms indicate that the entire cerebrospinal axis is involved, the best designation that can be given these cases is cerebrospinal meningitis, predominantly vascular, or parenchymatous. In the treatment of syphilis of the nervous system one must take cognizance of both the disease and the individual; for the former, salvarsan and mercury; for the latter, consideration and encouragement.

DISCUSSION

DR. BERNHARD SACHS: The point of view regarding syphilis as an etiologic factor in nervous diseases is of tremendous importance. I have been impressed with the large number of cases of grave syphilis that exist. There are cases of cortical encephalitis which yield promptly to treatment, but, perhaps, the gravest of all forms of syphilis are the cases of basilar syphilis, in which symptoms begin with the involvement of the cranial nerves. These cases begin, as a rule, with general malaise, followed by rigidity, headache, intracranial pressure and marked respiratory and bulbar symptoms. The next gravest group of cases are those of cortical encephalitis, but many of these yield to treatment. The number of cases of idiopathic epilepsies is growing smaller and smaller; some of the cases that appear in adult life without renal or cardiac disease are unquestionably of syphilitic origin. I would take issue with what has been said with regard to the diseases supposedly due to syphilis; syphilis can be associated with every form of central ner-

vous disease. Regarding the inclusion of typhoid spine, that gives me the opportunity of speaking of a group of cases of syphilitic spondylitis. I have encountered many of these cases, in which the tuberculous and traumatic elements could be excluded, and in which the examination of the blood and spinal fluid led to the diagnosis. The greatest of all surprises in regard to the syphilitic origin of the disease has, in my experience, occurred in trigeminal neuralgias. There were many cases that would not yield to any form of treatment, but after the administration of salvarsan and mercury the neuralgia disappeared promptly. I would paraphrase Dr. Barker's remarks: "If in slight doubt make a Wassermann; if in grave doubt, have it done by two or three observers."

DR. HUGH B. BLACKWELL: Attention has not been called to syphilis as it affects the auditory nerve. In the advanced cases of deafness it is almost impossible to help these patients, but if the cause of the condition is recognized early and active treatment is instituted, this grave condition may be prevented. The general practitioner should be more on the lookout for these cases.

DR. LEON T. LEWALD: Out of a series of 2,000 cases referred to us for examination, syphilis of the stomach was demonstrated in eleven instances. Some of these cases had been submitted to operation. In these cases no microscopic examination was made, and what was removed was considered to be either an ulceration or a new growth.

DR. MAX EINHORN: Syphilis of the liver may simulate cancer. Under antisyphilitic treatment these patients do well.

DR. JEROME M. LYNCH: It is important that the surgeon should be on his guard and eliminate syphilis, since without taking due precaution, he may aggravate the condition by his activity. As an illustration, a man was referred to me who had been suffering from hemorrhoids and had been treated at various clinics for a number of years. Operation had been suggested, but had been deferred. On examination a relaxed condition of the sphincter muscle was found. It is characteristic of syphilis of the spinal cord to find this muscle absolutely contracted and on examination of such a patient to find it flabby and relaxed. This patient gave a four plus Wassermann; he was referred to Dr. Fordyce, and improved under antisyphilitic treatment. If there had been an operation, the condition would have been aggravated. In another case it was found that the gallbladder had been drained and the appendix removed; on examination it was found that the subject had fabes, and under antisyphilitic treatment his condition improved.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

January, XIX, No. 1, pp. 1-148

1 Occurrence and Physiologic Significance of Fat in Muscle Fibers of Normal Myocardium and Atrioventricular System; Interstitial Granules (Mitochondria) and Phospholipines in Heart Muscle. H. H. Bullard, Pittsburgh.
2 *Normal Mode of Secretion in Thyroid. R. R. Bensley, Chicago.
3 *Influence of Diet and Iodids on Hyperplasia of Thyroid of Opossums in Captivity. R. R. Bensley, Chicago.
4 Vascular Drainage of Endolymphatic Sac and Its Topographical Relation to Transverse Sinus in Human Embryo. G. L. Streeter, Washington, D. C.
5 Problems of Human Dentition. L. Bolk, Amsterdam.

2. **Normal Mode of Secretion in Thyroid.**—Examination of sections of an experimental series and of a number of normal thyroid glands from animals killed as soon as obtained, Bensley says, reveals the presence in all, although in highly variable amounts in the individual members of the series, of a new secretion antecedent. This substance is in the form of vacuoles, occurring exclusively in the outer pole of the cell, which contain a dilute solution similar in its properties to the colloid of the follicular lumen, differing from the latter only in density. There are even in this substance clear vacuoles due to shrinkage in fixation, like those seen in the colloid of the lumen. In two members of the experimental series, this substance was present in such amount that it filled quite half the cell. In these cases the cell presents an appearance comparable to that of the secreting celis of an exocrine gland like the pancreas, with the exception that the hylogens are in dilute solution in fairly large vacuoles instead of in the form of granules, and they are in the basal end of the cell instead of the free end. In other words these cells exhibit the ordinary picture of a secreting cell with stored secretion antecedents, but with reversed polarity. Three possible interpretations of the presence of this material suggest themselves to Bensley: first, that it is a pathologic product representing cytoplasmic degeneration, or imbibed serous fluid, or simple edema; second, that it is colloid in process of resorption by a transcellular route; third, that it is a true secretion antecedent representing material formed in the base of the cell for the purpose of direct transport into the vascular channels. This last theory is favored by Bensley.

3. **Influence of Diet and Iodids on Hyperplasia of Thyroid.**—These experiments show that the spontaneous hyperplasia observed in the thyroid of the opossum under laboratory conditions can be produced and controlled by diet alone, and that given the conditions, dietary and otherwise, which produce an active hyperplasia iodin will not inhibit the reaction. At all periods of the hyperplasia and to an extent which is proportional inversely to the rate of hyperplasia iodids will cause the storage of intrafollicular colloid. The experiments also emphasize the necessity in studies on the reactions of the thyroid, of controlling closely the conditions under which the animals are kept, and of reducing the gland so far as possible by diet and iodids to a normal base before the experiments are begun.

American Journal of Roentgenology, Detroit

December, 1915, II, Nos. 11 and 12, pp. 869-932

6 Progress of Roentgenology in Past Decade. A. L. Gray, Richmond, Va.
7 Physical Investigation Work in Progress on Tubes and Accessories. W. D. Coolidge.
8 Roentgen Ray Spectra. A. W. Hull.
9 Factors Governing Photographic Action of Roentgen Rays. J. S. Shearer, New York.
10 Biologic Explanation of Roentgen Ray Effects. A Richards, Austin, Texas.
11 Device for Use in Connection with Hydrogen Tubes. J. T. Case, Battle Creek.

Archives of Internal Medicine, Chicago

January XVII, No. 1, pp. 1-180

12 *Origin and Status of So-Called "Transitional" White Blood Cell. F. A. Evans, Baltimore.
13 *Adams-Stokes Syndrome—Persistent Bradycardia Involving Both Auricles and Ventricles. Remarkable Prolongation of As-Vs Interval. W. S. Thayer, Baltimore.
14 *Typhoidin Quotient. Quantitative Studies of Cutaneous Test of Typhoid Immunity. E. S. Kilgore, San Francisco.
15 Splenic Pathology of Pernicious Anemia and Allied Conditions. P. Schneider, Minneapolis.
16 *Blood Urea Determinations in Two Hundred and Eleven Cases. H. Schwartz and C. McGill, Butte, Mont.
17 *Effect of Continuous Electric Light in Experimental Arthritis. W. E. Simmonds and J. J. Moore, Chicago.
18 *Intraspinal Treatment of Syphilis of Central Nervous System, According to Method of Swift and Ellis. R. Dexter and C. L. Cummer, Cleveland.
19 Prothrombin and Antithrombin Factors in Coagulation of Blood. G. R. Minot, G. P. Denny, Boston, and D. Davis, Baltimore.
20 *Some Clinical, Physiologic and Chemical Observations on Ptomain Poisoning from "Creamed" Codfish. M. A. Blankenhorn, G. E. Harmon and P. J. Hanzlik, Cleveland.
21 *Observations on Sino-Auricular Heart Block. S. A. Levine, Boston.
22 Serum Sickness in Series of Five Hundred Patients Treated with Diphtheria Antitoxin. M. Sturtevant, New York.

12. **Origin of So-Called Transitional Cell.**—Evans' research suggested to him that the so-called transitional cell is not an immature or degenerated form of any other cell type, but is an independent cell type in itself; that the productive center of the transitional cell is closely related to that of the polymorphonuclear system, but is independent of it; that the transitional is not an endothelial cell, bears no relation to the lymphocytes large or small, and is probably of myeloid origin; that the one distinct type of large mononuclear closely

resembling the transitional should probably be included with it to form an independent cell type; but that if there is any difference in the age of the cells of oval or indented nuclei, as seems likely, the cell with the indented nucleus—the typical transitional—should be considered the younger.

13. **Persistent Bradycardia Involving Both Auricles and Ventricles.**—Thayer presents the history of a woman who for two years and a half has had occasional syncopal and eclamptic attacks with extreme bradycardia. Between these periods the pulse is regular, averaging (in rate) but little over 30 to the minute. Polygraphic and electrocardiographic study reveals a synchronous slowing of both auricles and ventricles with prolongation of the As-Vs interval to a period longer than has hitherto been reported. In polygraphic tracings the *a-c* interval amounts to from 0.7 to 1.0 second; in electrocardiograms the P-R time is often over 0.7 second. The history of syncopal and eclamptic attacks with great slowing and irregularity of the pulse, as well as the prolonged As-Vs interval observed Thayer believes justifies a diagnosis of disease of the auriculoventricular bundle. The cause of the auricular bradycardia which would appear to depend on an essential anomaly of impulse formation, is not clear. A second case of apparently essential sinus bradycardia is reported. This subject is a seemingly healthy man now 35 years of age. The heart rate for at least five years, has been between 30 and 40 when the patient is at rest. There is no prolongation of the As-Vs interval. Exercise, deep breathing, atropin have their usual effects on the heart's rhythm and rate, but proportionately to the initial heart rate. Attacks of vertigo and nausea occurred five years ago but there is no evidence that these were associated with auriculoventricular dissociation. The patient remains in apparently good health despite his persistent bradycardia.

14. **Typhoidin Quotient.**—The use of typhoidin, tuberculin and other "quotients" in interpreting cutaneous diagnostic reactions is urged by Kilgore, for the reason that objectiveness is thus increased and quantitative analyses made possible. In individual cases the test as here used has a high probable error and is therefore not conclusive. It has a neutral significance when after twenty-four hours the typhoidin quotient is in the region of 1.40 to 1.50, that is, when the typhoidin spot is about one and one-half times the diameter of the control. When the quotient is considerably above 1.50, immunity to typhoid is suggested. When it is considerably below this value nonimmunity is suggested. When applied by statistical methods to groups of cases, Kilgore says, it may, however, be capable of much more definite interpretation as a qualitative index of typhoid immunity; since the general averages in this series of cases as well as those previously reported by Gay and Force show well-marked average differences in reaction between the immune and nonimmune. It is suggested, furthermore, that when applied in this way to sufficiently large groups of cases, the typhoidin quotient may prove useful as a quantitative index of typhoid immunity.

16. **Determinations of Blood Urea.**—In studying various pathologic conditions Schwartz and McGill have considered a blood urea above 0.250 gm. per liter as abnormal. Twenty-five cases of acute nephritis were observed. Of these eighteen were toxic nephritis accompanying lobar pneumonia. The urea averaged 0.578 gm. per liter, thus showing a definite increase. Only three cases showed a normal amount of urea. All showed albumin and casts in the urine. Twenty-two phthalein tests were made; sixteen showed decreased elimination. Twelve cases which were clinically suspected of being nephritis, showed an average urea of 0.248 gm. per liter, which is a normal value. The phthalein excretion was normal on all the cases which were examined. Of nineteen cases of mild chronic nephritis, five were parenchymatous and fourteen were interstitial nephritis. The average blood urea was 0.288 gm. per liter. Five of the cases showed normal blood urea. The phthalein excretion in this group was, with one exception, normal. In sixteen cases of advanced chronic nephritis, the average blood urea was 0.444 gm. per liter. Three cases showed normal values. Two cases of albuminurie retinitis showed a normal area. In one case of uremia the maximum area at the time the patient had uremic symptoms was 1.008 gm. per liter, with but a trace of phthalein excreted. The average blood urea in these cases of advanced chronic nephritis with cardiac decompensation was 0.523 gm. per liter, which is higher than the same group of cases without cardiac decompensation, and also distinctly increased above normal value. The blood pressure of all these patients was distinctly elevated. The phthalein was just a trace in two cases, 15 per cent. in another case.

The authors found increased urea in cases of nephrolithiasis, pyelonephritis and pyonephrosis, cystitis and pyelitis. The majority of cases of lobar pneumonia have a raised value. Approximately one-half of the cases of syphilis show a distinct elevation. In exophthalmic goiter there is an increase, and in myxedema, a decrease in blood urea. In primary anemia, nephrolithiasis, pyelonephritis, pyonephrosis, septicemia, streptococcic meningitis, Rocky Mountain spotted fever, pulmonary tuberculosis, diabetic coma, intestinal obstruction, malignancy, and common duct obstruction, there is a definite increase in most of the cases. A slight elevation occurs in valvular heart lesions, myocarditis, secondary anemia, urticaria, fractured skull, cerebral hemorrhage, concussion, bone cyst, traumatic pleurisy, arteriosclerosis and chronic arthritis. No changes were found in psoriasis, pityriasis rosea, epilepsy, meningococcic meningitis, diabetes and functional neurosis. The urea content of body fluids in the majority of cases, agrees with the blood urea. The blood pressure was taken in 178 cases. There is no relation between blood pressure and the amount of blood urea. The results of phthalein excretion in ninety-six cases agree with the observation of others, who find in most cases the percentage of phthalein excreted is diminished along with increase in blood urea.

17. **Effect of Electric Light in Experimental Arthritis.**—The production of experimental arthritis in rabbits was either prevented by Simmonds and Moore, or was much milder in degree, in animals treated with the continuous incandescent electric light than in the controls not treated. Rabbits treated with the incandescent electric light after developing acute experimental arthritis recovered more rapidly than the control animals.

18. **Intraspinal Treatment of Syphilis of Central Nervous System.**—Dexter and Cummer report on fifty-nine intraspinal injections of autosalvarsanized serum given in ten cases. Following these injections they have seen no symptoms, temporary or permanent, which could in any way be attributed to injury to the central nervous system. They have seen no deaths, paralysis or bladder disturbances. Patients who have had reactions of pain following the treatment have shown greater and more rapid improvement than those who had no discomfort from the procedure. The results in six of these ten cases has been a symptomatic improvement so emphatic that the patient's economic efficiency has been restored.

20. **Ptomain Poisoning from "Creamed" Codfish.**—The clinical symptoms observed in a large number of patients attacked with ptomain poisoning from "creamed" salted codfish were epigastric distress, nausea, vomiting, intestinal colic and diarrhea. Complete recovery occurred in from twelve to twenty-four hours, in a part of the individuals spontaneously, and in another part following gastric lavage. Bacteriologic examination of the "creamed" fish showed the presence of the *Bacillus coli communior*, and other saprophytes and some staphylococci. The gastro-intestinal disturbances are not attributed to infection by the organisms in the fish material. Extracts of the "creamed" fish gave practically the same physiologic reactions as the same brand of salted codfish which was previously allowed to putrefy and then was prepared in the same manner as the food served to the patients. The physiologic effects consisted of a marked stimulation of intestinal and uterine peristalsis with surviving organs, and a fall of blood pressure with gradual recovery. The purified active extract of the "creamed" putrefied salted codfish contained some physiologically active base, whose chemical reactions resemble

those of the group of diamins to which putrescin, cadaverin and histamin belong.

21. **Sino-Auricular Heart Block.**—Four cases are described by Levine showing pauses of the heart's action which were equal in length to multiples of the normal heart cycle of the respective individual. There was no evidence of auricular activity during the pauses, which points to a blocking of the impulses above the auricles, that is, at the S-A node. The first case exhibited bradycardia on exertion. The ventricular rate fell to 43 as a result of acceleration of the sinus rate. Tracings taken over a period of five months showed that block depended on a slight sinus arrhythmia. Whenever the sinus rate increased beyond a certain point, the node failed to conduct the impulse to the auricles. The three other cases showed S-A block only after digitalis had been taken; after it was withdrawn, the block was no longer observed. The second case described showed frequent pauses in which one, two, three or four heart beats were blocked. At one time there was observed in the electrocardiogram a condition of total sino-auricular block for many seconds while the ventricles were beating at their slow idioventricular rhythm.

Boston Medical and Surgical Journal

January 20, CLXXIV, No. 3, pp. 73-108

23 *Treatment of Nephritis. C. Phipps, Boston.
24 Injured Employee and Workmen's Compensation Law. Results of Impartial Examinations. F. D. Donoghue, Boston.
25 Outline for Management of Heart Cases from Outpatient Department Standpoint. M. H. Wentworth, Concord.
26 Development of Gold Sol "Paretic" Reaction as Compared with "Cerebrospinal Syphilitic" Type. H. C. Solomon and E. S. Welles, Boston.
27 Nonfatal Fracture of Axis. F. W. O'Brien, Boston.
28 Vacuum Flushing Leech. H. S. White, Orwell, Ontario.

23. **Treatment of Nephritis.**—Because the kidney is one of the excretory organs of the body, Phipps says, our first thought in disease is usually to relieve it by transferring as much of its work as possible to other organs of elimination, such as the bowels, skin, etc. In acute infectious cases one may employ such drugs as hexamethylenamin and salol for the purpose of disinfecting the urinary tract, and in the so-called idiopathic cases (usually due to the *Bacillus coli communis*) some benefit may be derived thereby. Surgical measures such as capsule-splitting and decapsulation are of demonstrated value in selected cases. Bleeding and lumbar puncture are methods of symptomatic treatment, particularly in uremia but they are of use only in the sthenic form in which the systolic blood pressure is as high as 200 mm. In the asthenic type of uremia hot packs, hot enemas and pituitary extract are of chief value. Increased elimination through the bowels is of the greatest value. The second method of affording relief to the diseased kidney is to make elimination as easy as possible largely by regulating the diet. However, Phipps says, any rigorous system of diet may (but should not be) so strict or continued so long that it may be distinctly harmful to the patient; hence more freedom in the allowanoe of protein than is recommended in the "textbook" nephritic diet may be of apparently great advantage in the individual case. Thyroid extract has, perhaps, a great value in the treatment of nephritis. If given carefully, it is safe.

Bulletin of Johns Hopkins Hospital, Baltimore

January, XXVII, No. 309, pp. 1-28

29 *Gaucher's Disease; Report of Two Cases in Infants. J. H. M. Knox, Jr., H. R. Wahl and H. C. Schmeisser, Baltimore.
30 *Pleural Eosinophilia; Report of Case. S. Bayne-Jones, Baltimore.
31 Colorimetric Method for Determination of Hydrogen Ion Concentration of Biologic Fluids. S. H. Hurwitz, K. F. Meyer and Z. Ostenberg, San Francisco.
32 *Hodgkin's Disease of Intestines; Report of Case. L. M. Warfield and H. T. Kristjanson, Milwaukee, Wis.

29. **Gaucher's Disease.**—The authors present the cases of two infants, sisters, who did not thrive from birth and died, one at 11 months, the other at 15 months of age, from gradually increasing weakness. The most striking clinical feature was the great enlargement of the spleen and liver. The blood picture was that of a moderate anemia. The leukocytes were rarely increased, and for the most part were markedly reduced in number. The skin in both cases had a peculiar yellowish-brown hue, more marked on the face and exposed surfaces. In one case the diagnosis was confirmed during life by the examination of an excised lymph gland. Microscopically, in both cases nearly all the organs were found to contain large, pale, granular or finely vacuolated cells, in which there was a peculiar refractive substance having the chemical and staining properties of lipoid material. These cells are apparently identical with those described by Gaucher, and later by a number of observers, in the condition called "Gaucher's disease." These two cases and that of Niemann are the only ones in which the disease has been reported in infancy. The observation of cherry-red spots in the maculae of one of the patients in view of the presence of similar cells in the nervous tissues of cases of amaurotic family idiocy, lends additional interest and suggests the possibility that the essential degeneration in the latter condition may be of a similar character.

30. **Pleural Eosinophilia.**—Bayne-Jones presents the account of a case of postpneumonic pleural effusion which contained 45 per cent. of eosinophils. The report of eight similar cases gathered from the literature are summarized. Many of the eosinophil cells of this exudate were of the mononuclear type. The patient's blood exhibited a slight eosinophilia, but did not contain any mononuclear eosinophils. The morphology of these pleural eosinophils suggests strongly that they have a local origin outside of the bone-marrow. A review of the possible etiologic factors in pleural eosinophilia, the author says, seems favorable to the hypothesis of Schwarz, that protein split products in an exudate undergoing absorption may constitute the eosinotactic substance that produces both the general eosinophilia and the local eosinophilia.

32. **Hodgkin's Disease of Intestines.**—A Bulgarian, aged 27, common laborer by occupation, complained that he was "sick in his stomach." He had never been ill, smoked moderately, and denied venereal disease. For about eight months he had had intermittent pain in the stomach after eating, which was not severe enough, at first, to force him to stop work. The pain, however, had gradually increased, he had vomited occasionally after meals, had become weak, and lost strength and weight so that he had been obliged to stop work in January. Since the onset of this trouble, he had had almost constant diarrhea. There had also been an intermittent cough. He was only fairly well nourished. There were a few mucous râles at the lung apices, and slight impairment of the percussion note at both bases. The abdomen showed a "curious distention below the umbilicus, as with gas, with apparent constriction just below the costal margin." There was no increase in liver dulness. There were no masses palpable. The most probable diagnosis seemed to be pulmonary tuberculosis, with a dry peritoneal tuberculosis. Some fluid was removed from the right pleural cavity. The leukocytes were 7,000. Differential count (Hastings' stain) showed polymorphonuclears, 60 per cent.; mat. and immat. lymp., 34 per cent.; trans. (end.) 6 per cent.; bas. 1 per cent. There was no occult blood in the stools. Several examinations for tubercle bacilli in the sputum were negative. The urine was normal. The patient gradually grew weaker, and died rather suddenly, with obscure abdominal symptoms, subnormal temperature and only slightly increased pulse rate, about six weeks later. Anatomic diagnosis, acute general peritonitis, with perforation of jejunum; diffuse and nodular thickening of intestines, enlargement of mesenteric glands, acute splenic tumor; slight pleural effusion (right side); edema of lungs. The microscopic picture of the intestines was that of Hodgkin's disease. The authors suggest that the portal of entry of the infection probably was the intestine.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

January, VIII, No. 7, pp. 101-128

33 Management of Patients with Chronic Renal Disease. T. C. Janeway, Baltimore.

Colorado Medicine, Denver

January, XIII, No. 1, pp. 1-34

34 *Heart Disease and Pulmonary Tuberculosis as Contraindications to Surgery. H. G. Wetherill, Denver.
35 Use of Wire Tourniquet in Partial Thyroidectomy. L. Freeman, Denver.
36 Pneumococcus Sore Throat in Children. F. P. Gengenbach, Denver.
37 Etiology and Diagnosis of Endometritis. C. B. Ingraham, Denver.
38 Treatment of Endometritis. C. Powell, Denver.
39 Ethical Medicine. M. R. Fox, Sterling.

34. Heart Disease and Tuberculosis.—Wetherill's experience with pulmonary and heart substandard risks has been uniformly favorable when operations have been necessary, but he advises that extraordinary precautions must be employed to safeguard such patients from danger, and that the time of the operation should be as brief as possible. Wetherill never refused such an invalid a necessary surgical operation because he happened to have a heart lesion or even advanced pulmonary tuberculosis. He believes that such operations on such patients may be done with greater safety in a high and dry climate than in the humid and torrid regions. Certainly their recovery is more prompt and complete under Colorado atmospheric conditions than at sea level. He has observed many times the most astonishing improvement in the lung and heart lesions of such patients, and in their general well being, when, for example, the operation may have been done for the elimination of a local focus of infection from which the pulmonary or heart complications may have been maintained and perpetuated or may have had their origin. He urges that the surgeon should have in such an emergency the advice and counsel of a capable and expert internist to advise such preparatory régime and medicinal treatment as the patient requires. If time permits, absolute rest in bed previous to operation, with such treatment as may bring about the highest attainable measure of cardiac compensation and pulmonary rest, is indispensable. At this stage, as well as during the period of convalescence, the patient should be under the closest scrutiny of the internist, who should have a free hand and the largest liberty in directing any treatment that he may regard as essential to the welfare of the patient.

Georgia Medical Association Journal, Augusta

January, V, No. 9, pp. 193-225

40 Physician, Yesterday, Today and Tomorrow. W. B. Hardman, Commerce.
41 Chronic Tonsillitis. Adenoids. S. R. Roberts, Atlanta.
42 Treatment of Chronic Interstitial Nephritis. T. D. Coleman, Augusta.
43 Some Phases of Nephroptosis in Women. W. F. Shallenberger, Atlanta.
44 Pellagra and Acidosis. H. F. Harris, Atlanta.

Illinois Medical Journal, Chicago

January, XXIX, No. 1, pp. 1-80

45 Clinical Symptoms and Physical Signs in Early Diagnosis of Pulmonary Tuberculosis. F. M. Pottenger, Monrovia, Calif.
46 Intravenous Use of Typhoid Vaccine and Foreign Protein in Treatment of Typhoid. J. L. Miller, Chicago.
47 Dementia Praecox Studies. B. Holmes and J. Retinger, Chicago.
48 Cooperative Method of Diagnosis. C. Beck, Chicago.
49 Some New and Nonofficial Remedies. B. Fantus, Chicago.
50 Tonsil Technic. R. H. Woods, La Salle.
51 Value of Roentgen Ray Examination in Pulmonary Disease. E. Blaine, Chicago.
52 Focal Infections of Accessory Nasal Sinuses. G. H. Mundt, Chicago.
53 Treatment of Tetanus. L. J. Quillin, Streator.
54 Mouth Hygiene and Its Relation to Systematic Diseases. J. W. Fulenwider, Collinsville.
55 Intestinal Autointoxication. L. C. Diddy, Piper City.
56 Newer Methods of Cesarean Section. J. B. DeLee, Chicago.
57 Longevity in Its Relation to Sex or Why Fewer Men Than Women Attain Old Age. A. H. Burr, Chicago.
58 Postgraduate Work at Home. A. J. Roberts, Ottawa.

Journal-Lancet, Minneapolis

January 15, XXXVI, No. 2, pp. 31-60

59 Volvulus. R. E. Weible, Fargo, N. D.
60 Relaxed Pelvic Outlet. R. L. Murdy, Aberdeen, S. D.
61 Value of Vital Statistics. A. D. Hard, Marshall.
62 Streptococcal Pharyngitis. J. D. Lewis, Minneapolis.
63 Convergence Insufficiency and Divergence Excess. L. J. Coria, Minneapolis.
64 Some Points Regarding Astigmatism. S. E. Kerrick, Minneapolis.
65 Interpretation of Wassermann Reaction. G. M. Olson, Minneapolis.
66 *Snuff Poisoning; Report of Cases. E. L. Crispin, Rochester.

66. Snuff Poisoning.—Twenty-five cases of snuff poisoning have been indexed in the Mayo Clinic; none prior to 1914. The duration of the habit in some of these extends over a number of years. Crispin says that the use of "Copenhagen" snuff produces most deleterious results. The users of excessive amounts suffer from chronic headaches, indigestion, irritable heart action, increased respiration on exertion, and impaired mentality to the point of degeneracy. Delusions and hallucinations are not uncommon in the worst cases. A number of cases of marked psychosis have been observed in the State Hospital at Rochester, believed to be due to the excessive use of this form of snuff. The chronic snuff habitué does not consult the physician to be cured of the habit, but because of impaired organic function. The scarring and ulceration of the gingival and buccal mucous membranes with the long standing chronic irritation, make these ulcerations in the snuff chewers probable sources of future trouble in which malignancy may be considered. Crispin expresses the hope that more general recognition and publicity of the serious effects of the use of snuff will result in antilegislation to drive it from all states in which it has a foothold; and also that publicity will serve as a warning to other states not yet similarly affected.

Journal of Laboratory and Clinical Medicine, St. Louis

December, 1915, I, No. 3, pp. 155-210

67 *Gumma of Pituitary Associated with Lesions in Spinal Cord which May Represent Early Lesions of Syringomyelia. P. G. Woolley, Cincinnati.
68 *Some Features of Purin Metabolism. H. G. Wells, Chicago.
69 Ferment-Antiferment Balance of Serums. J. W. Jobling, W. Petersen and A. A. Eggstein, Nashville, Tenn.
70 *Experimental and Clinical Studies on Mental Defectives. A. W. Peters and C. D. Blackburn, Philadelphia.
71 *Method of Sterilizing Sputum Before Examination. D. M. Griswold, Detroit.
72 Slide Holder and Protector for G. S. and E. Warming Stage. C. R. Eckler, Indianapolis.
73 Hydrogen-Ion Acidity. T. H. Kelly, Cincinnati.

January, No. 4, pp. 211-282

74 Growth. L. B. Mendel and T. B. Osborne, New Haven, Conn.
75 *General Pathology of Pellagra with Special Reference to Findings in Thyroid and Suprarenals. P. F. Morse, Detroit.
76 Antagonistic Action of Vagus and Sympathetic Divisions of Autonomic Nervous System in Pulmonary Tuberculosis. F. M. Pottenger, Monrovia, Calif.
77 Etiology and Laboratory Diagnosis of Smallpox and Chickenpox. J. N. Force, Berkeley, Calif.
78 Methods for Determination of Glucose in Blood. R. S. Morris, Cincinnati.
79 Coagulation of Blood. E. Stoldt, Detroit, and V. C. Vaughan, Ann Arbor.

67. Gumma of Pituitary.—A case is reported by Woolley in which there are certain lesions in the pituitary and in the spinal cord, which, it is suggested, have a common etiology. The lesion in the pituitary is definitely syphilitic. Those in the cord are possibly syphilitic. The cord lesions seem to suggest that they represent an early stage of syringomyelia.

68. Some Features of Purin Metabolism.—The case of uric acid in human metabolism according to Wells stands at present as follows: (1) There is conclusive evidence that the human organism does not oxidize uric acid formed in metabolism into allantoin, as all other mammals except the anthropoids seem to do. (2) There is no conclusive evidence that man destroys uric acid by any other method, although it has not yet been positively established that he may not do so. (3) There is perhaps more reason to suspect that part of the purins of nucleic acid may be destroyed without passing through the stage of uric acid, but there is no direct evidence whatever that such a method of purin katabolism does exist. (4) It is highly probable, in consideration of what seems to be the best available evidence, that most of the purin of human food and practically all the purin from cell metabolism is converted into uric acid and excreted as such. Some of the food purins may be destroyed by bacteria in the intestines.

V. 19

70. **Studies on Mental Defectives.**—The pathology of mental defectives including especially the feebleminded is based by Peters on the principle that their condition, both physiopathologic and psychopathologic, is due to physical abnormalities of growth and development which affect not only the neural, but also other systems of organs by reason of intimate hormonal or neural correlation or both. In the majority of cases these begin with the parentage, are continued and magnified during the period of gestation, and are deeply impressed in the physical constitution of the individual, so that abnormal growth and development characterizes such individual not only during gestation but continuously after birth. In acquired defect the incidence of the deviation from the normal occurs at a later period in the cycle of development. An outline of a plan, based on the principle of growth-development, for the examination, diagnosis and further study of mental defectives, is presented. This outline places emphasis on the physiopathologic factors as well as on the psychopathologic and the facts thus ascertained constitute the logical basis for further intensive study of the defective individual by physiologic and biochemic methods.

71. **Method of Sterilizing Sputum Before Examination.**—It has been the practice of the laboratory of the Detroit Board of Health to autoclave all sputum bottles after the contents have been examined, then send them to the dump. It was desired to study the effect of this treatment on the sputum. In a series of 200 sputums examined first in the usual way, and then after autoclaving, the following results were obtained: (1) All sputums found positive in the usual way were found positive after autoclaving. (2) Among the sputums found negative (150) in the usual way, three showed tubercle bacilli after autoclaving. The staining characteristic of the tubercle bacillus is not altered.

75. **Pathology of Pellagra.**—Morse reports in detail the postmortem findings in a case of pellagra. Summary: Simple or brown atrophy of the heart, liver, spleen, lungs, intestinal muscles (?) and kidneys. Degenerations and brownish pigmentation of the posterior root ganglia (and other groups of nerve cells). Active ulcerative proctitis and chronic glossitis of marked degree. Hyperkeratosis and sclerosis of the skin with areas of round-celled infiltration. Chronic productive interstitial thyroiditis with compensatory reaction on the part of the thyroid follicles. Small areas of round-celled infiltration in the thyroid, suprarenal, liver, lung, bladder, tongue, rectum and skin. The changes found in the thyroid and suprarenal are unusual ones, thus lending support to the tendency to consider them of importance in the production of the clinical state presented by the patient. Morse believes that the nervous lesions hitherto described and partially confirmed by his findings are wholly of toxic or nutritional origin. Many of the lesions are postmortem changes and other artefacts, along with secondary changes which are common in many other conditions. He believes that reports of degenerations based on the appearance of granules and other slight changes in nerve-cells have to be interpreted with extreme caution, inasmuch as so much depends on the functional state of the cells at the time of death, postmortem change, fixative, method of preparation, etc. One of the safest criteria for the establishment of the fact of nerve cell degeneration is fat, none of which was demonstrable in Morse's case.

Kansas Medical Society Journal, Topeka

January, XVI, No. 1, pp. 1-32

80 Methods and Value of Blood Transfusion. W. M. Mills, Topeka.
81 Pyloric Obstruction in Infancy. G. L. McGonigal, Kansas City.
82 Home Treatment of Tuberculosis. W. R. Pennington, Ottawa.
83 Typhoid. N. C. Speer, Osawatomie.

Medical Record, New York

January 15, LXXXIX, No. 3, pp. 89-134

84 Removal of Diseased Tonsils by Method Minimizing Hemorrhage. A. P. Voislawsky, New York. History of Tonsillotomy. D. B. Delavan, New York.
85 *Fractures of Elbow. J. Grossman, New York.
86 Case of Trichiniasis. M. G. Wohl, Omaha.
87 Flat Foot; Its Relation to Neuritis and Its Treatment. W. Martin, Atlantic City, N. J.
88 Cirsoid Aneurysm Treated by Direct Application of Boiling Water. J. A. Wyeth, New York.
89 Treatment of Dementia Praecox with Sodium Nucleinate; Report of Cases. C. F. Read, Peoria, Ill.
90 Syphilis Inexplicable. W. S. Reynolds, New York.
91 Diagnostic Value of Russo Reaction. M. Kahn, New York, and L. Wechsler, Pittsburgh.

85. **Fractures of Elbow.**—Grossman's paper is based on the study of fifty cases of fracture of the elbow, which were treated by the acute flexion position and in which he succeded in obtaining good functionating limbs in some and a cure, with normal functionating limbs, in the majority. The cases were divided as follows: twenty-four of internal condyle; fourteen of external condyle; eight of supracondyloid and four of olecranon.

Missouri State Medical Association Journal, St. Louis

January, XIII, No. 1, pp. 1-50

92 Symptomatology and Treatment of Alopecia Areata. R. L. Sutton, Kansas City.
93 Multiple Brain Abscesses of Otitic Origin. E. L. Myers, St. Louis.
94 Early Management of Anterior Poliomyelitis. C. B. Francisco, Kansas City.
95 Deformities of Foot. E. L. Cooley, St. Louis.
96 Spastic Constipation. T. S. Fleming, Moberly.
97 Operative Treatment of Squint. R. J. Curdy, Kansas City.
98 Why Remove Tonsil? I. D. Kelley, Jr., St. Louis.
99 Ametropia in Schoolchildren. E. L. Russell, Kansas City.
100 Penetrating Wounds of Abdomen. W. Smith, Springfield.
101 Etiologic Factors in Vomiting of Pregnancy and Measures to Relieve It. J. D. Seba, Bland.
102 Injury with Extravasation of Blood in Pericardium. W. N. Yates, Fayetteville, Ark.

New Jersey Medical Society Journal, Orange

January, XIII, No. 1, pp. 1-52

103 Institutional Care of Insane. B. D. Evans, Morris Plains.
104 Borderland of Psychoses. C. C. Beling, Newark.
105 Diagnosis of Neurasthenia. T. P. Prout, Summit.
106 Effects of Syphilis on Central Nervous System. H. A. Cotton, Trenton.
107 Conservation of Infant Life. E. A. Ayres, Branchville.

New York Medical Journal

January 15, CIII, No. 3, pp. 97-144

108 Increasing Mortality in United States, from Diseases of Heart, Blood Vessels and Kidneys. E. L. Fisk, New York.
109 Remote Effects of Synchronous Palsy of Peripheral Branches of Facial and Trifacial Nerves. S. H. Brown, Philadelphia.
110 Diet in Chronic Heart Disease. R. Abrahams, New York.
111 Diagnostic Value of Records of Breathing and of Speech. O. Glogau, New York.
112 Percussion Technic and Theory. B. A. Fedde, New York.
113 Spinal Anesthesia with Stovain in Genito-Urinary Surgery. J. S. Read, New York.
114 Urinary Disturbances in Male. C. Martin, St. Louis.
115 Mother's Milk for Mother's Baby. W. W. Riha, Bayonne, N. J.
116 Discharging Mastoid Sinuses. A. N. Schiller, New York.

January 22, No. 4, pp. 145-192

117 Common Affections of Eye. S. D. Risley, Philadelphia.
118 Chronic Tonsillitis. L. Fischer, New York.
119 Dermatitis Factitia. H. K. Gaskill, Philadelphia.
120 Problems of Syphilitic Reinfection; Report of Case. M. B. Parounagian, New York.
121 Grippe and Overheating. W. Brady, Elmira.
122 Congenital Unusually Large Scrotal Hernia. W. B. Jennings, Scarsdale.
123 Allen Treatment in Diabetes Mellitus; Report of Five Cases. S. H. Paley, New York.
124 Treatment of Obesity. J. Gutman, New York.
125 Metabolism of Tissue Autolysis. B. Oettinger, Long Beach, Calif.

Northwest Medicine, Seattle, Wash.

January XV, No. 1, pp. 1-36

126 Rocky Mountain Spotted Fever. L. Paine, Washington, D. C.
127 Hypothyroidism. J. R. Brown, Tacoma.
128 Hyperthyroidism. H. P. Marshall, Spokane.
129 Use of Electricity in Various Forms of Goiter. E. Myers, Portland, Ore.
130 Prevalent Types of Goiter in Western Washington. E. O. Jones, Seattle.
131 Organotherapy in Relation to Practice of Medicine. F. R. Starkey, Philadelphia.
132 Plastic Operation on Ovary; Report of Case of Pregnancy Following Such Operation. H. J. Whitacre, Tacoma.

Oklahoma State Medical Association Journal, Muskogee

January, IX, No. 1, pp. 1-26

133 Hypertonia Vasorum Cerebri. W. F. Dutton, Tulsa.
134 Sphygmomanometer. V. W. Hudson, Salisaw.
135 Salvarsan and Cerebrospinal Syphilis. A. D. Young, Oklahoma City.
136 Arteriosclerosis — Early Retinal Symptoms. W. T. Salmon, Oklahoma City.
137 Federal Antinarcotic Law — Substitute for Opium. J. Culbertson, Maud.
138 Case of Actinomycosis of Tongue. A. W. Roth, Tulsa.

Ophthalmic Record, Chicago

January, XXV, No. 1, pp. 1-54

139 Intraocular Tuberculosis. E. Jackson, Denver.
140 Ocular Tuberculosis and Its Treatment. J. L. McCool, Portland, Ore.
141 Some Ocular Conditions Dependent on Tuberculosis and Systemic Gonorrhea. W. C. Posey, Philadelphia.

Providence Medical Journal

January, XVII, No. 1, pp. 1-50

142 Effective Lines of Health Work. C. V. Chapin, Providence.
143 Hydatid Cyst. C. E. Hawkes, Providence.
144 Addison's Disease; Report of Two Cases. R. A. Goodwin, Providence.
145 Renal Calculus; Report of Seven Cases. R. E. Taylor, Providence.

Public Health Journal, Toronto

January, VII, No. 1, pp. 1-56

146 Relation of Medical Practitioner and Public to Cancer Problem. C. R. Dickson, Toronto.
147 Public Health Aspects of Alcoholism. C. Miller, Stellarton, N. S.
148 Preventive Philanthropy Improving Condition of Poor at Long Range. C. E. A. Winslow, New York.
149 Place of Laboratory in Public Health Work. A. G. Nichols, Halifax.
150 Attitude of Federal Government Toward Tuberculosis. G. D. Porter, Toronto.
151 Tropical Sanitation in Its Relation to General Sanitation. W. C. Gorgas, U. S. Army.

West Virginia Medical Journal, Huntington

January, X, No. 7, pp. 217-254

152 Pain in the Head. C. T. St. Clair, Bluefield.
153 Effects of Harrison Antinarcotic Law. H. W. Keatley, Huntington.
154 An Appeal for Justice. J. C. Irons, Elkins.
155 Remarks on Fracture. I. Hardy, Morgantown.
156 Syringomyelia; Report of Case. E. S. Dupuy, Beckley.
157 Indications for Splenectomy or Surgical Spleen. O. O. Cooper, Hinton.
158 First Aid in E. E. White Coal Company. G. C. Merriam, Stotesbury.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

January 1, I, No. 2870, pp. 1-36

1 *General Treatment of Infected Gunshot Wounds. H. M. W. Gray.
2 Sensitized Shiga and Flexner Vaccines in Treatment of Chronic Bacillary Dysentery. L. Rogers.
3 Case of Cholohemothorax Due to Bullet. T. R. Elliott and H. G. M. Henry.
4 Improved Method of Lifting Patients on to Hospital Ships from Barges and Boats. A. W. Mayo-Robson.
5 Use of Solutions of Quinin as Dressing for Infected Wounds. J. Tweedy.
6 Traumatic Implantation of Epidermis in Track of Gunshot Wound. G. H. Edington.
7 Gunshot Wound of Superior Longitudinal Sinus; Report of Three Cases. A. W. Nuthall.
8 Wick Drains. G. H. Colt.
9 Local Treatment of Suppurating Skin Lesions and Infections. G. Home.

1. Treatment of Infected Gunshot Wounds.—Army surgeons, according to Gray, have been compelled, since this war began to acknowledge the inefficiency of antiseptics when used as a preventive or for disinfecting agents in badly infected, lacerated wounds. Until applications were employed which stimulated a concentration of the general defensive forces of the body in and around the wound, no real advance in treatment was made. It mattered not what kind or what strength of antiseptic, pure and simple, was used, the infection ran a fairly definite course of fairly definite duration, which varied merely according to the patient's power of resistance. While the importance of free drainage was speedily acknowledged, quite a long time passed before there was any satisfactory recognition of the fact that the resisting agencies of the patient's own body are far more effective in dealing with a local infection than any purely antiseptic solution, powder, or paste introduced into it from without. It has been proved that the use of salt solutions applied in various ways, fulfils all the striking claims made for it by Wright. Hypertonic saline dressing, especially in the form now known as the "tablet and gauze pack," fulfils all desiderata better than any other yet applied.

After the wound has been cleaned by operation, all the recesses of the wound, these recesses should be sought out by the finger, are filled, fairly firmly, with gauze wrung out of 5 to 10 per cent. salt solution, in the folds of which are placed numerous tablets of salt. Blood clot which may form during the packing should be wiped away. The gauze should be packed in concertina-wise, a tablet being placed between every third or fourth fold. A fairly large, fenestrated rubber tube is placed so as to reach to the deepest part of the main cavity, which is then filled with gauze and tablets. The dressing is made flush with the skin and the tube projects slightly from its midst. The surrounding skin is painted with solution of iodin or other antiseptic application. Two or three layers of gauze are then used to cover the wound and surrounding skin. A suitable amount of absorbent cottonwool is applied and a bandage wound on smoothly and firmly.

Lancet, London

January 1, I, No. 1, pp. 1-58

10 *Treatment of Dysentery. R. Ross.
11 *Penetrative Wounds of Abdomen. W. C. B. Meyer and D. C. Taylor.
12 Treatment of Concussion Blindness. A. F. Hertz and A. W. Ormond.
13 Widal's Reaction with Standardized Agglutinable Cultures. E. W. A. Walker.
14 Outbreak of Anthrax Conveyed by Infected Shaving Brushes. R. R. Elworthy.
15 *Diagnosis of So-Called Primary Tuberculous Meningitis. D. W. K. Moody.
16 *Fatal Case of "Dope Poisoning." W. E. Lee.
17 An Interrupted Hammock-Bed in Treatment of Compound Fractures of Hip and Thigh. C. W. G. Bryan.
18 Sanitation in Billets and Camps. A. White.

10. Treatment of Dysentery.—The use of emetin among the troops, Ross says, has convinced every one of its great and indeed remarkable, efficacy. As a general rule, doses of 1 grain of the hydrochlorid a day were prescribed, either given in one subcutaneous injection or given in two doses morning and evening. Practice differed considerably as to the number of doses administered. In one hospital the rule was that of three days on and three days off, and in another hospital the rule was five days on and five days off; while many practitioners preferred to give it daily, even for some weeks, without intermission. The practice in India has frequently been to administer it not only for weeks, but for many months; and Ross has heard of patients who have altogether had a hundred doses or more. But opinion began soon to be divided on this point in rather an abrupt manner. In one hospital three patients died without any obvious cause of death, and some suspicion was aroused that the death may have been due to heart failure owing to cumulative action of the emetin.

Two of the patients died, indeed, about a week after the last dose of emetin, and both these patients had mysterious rises of temperature for some days before death, these suggesting that death was really caused by some secondary infection which could not be traced clearly at the necropsy. The third patient died four days after the last dose of emetin, though he was convalescent and had been allowed out of bed. The total amount of emetin which the patient had received from the beginning scarcely amounted to a single lethal dose, namely, about 15 grains for a man. There was fatty degeneration of the heart in all these cases, but no more than is frequently found after any grave illness. On the other hand, numerous patients had received emetin for more than thirty days without exhibiting any bad effects which could at all be traced to the drug. Nevertheless, prac-

tice gradually crystallized into the formula that, unless there was strong reason for continuing emetin, it should be remitted, at least for a time after about ten days, especially if it had ceased to do good.

11. **Penetrative Wounds of Abdomen.**—A list of the first fifty consecutive cases operated on at one casualty clearing station in the field, Flanders, is given by Meyer and Taylor. Out of this series seventeen deaths have occurred and thirty-three cases have been evacuated to the base. From the sections the authors have been able to make certain that the cause of death in most cases of perforative abdominal lesions is primary hemorrhage, combined with an element of shock always present in these cases. Next in importance appears to be general peritonitis, which, however, takes from about forty-eight hours onward to bring about a fatal issue. A few patients seem to die from pure shock due to tissue damage inflicted by irregular shaped missiles without any degree of hemorrhage (namely, kidney and liver in one case); a few others from secondary hemorrhage into the bowel. Forty-one cases were not operated on during this period, because patients were moribund, because no perforation was suspected, or because conservative treatment was considered advisable; seventeen died, twenty-four evacuated to the base. Of the cases deliberately treated conservatively not a single patient died, though the bullet had traversed the peritoneal cavity quite obviously in a number of these. The indications for conservative treatment were always the general appearance of the patient, absence of shock, the condition of the pulse, the state of the abdomen, and the course of the bullet.

15. **Diagnosis of So-Called Tuberculous Meningitis.**—Retention of urine, without any apparent cause, Moody says, is a pathognomonic sign of so-called primary tuberculous meningitis in the adult male. He has seen this sign in four cases.

16. **Fatal Case of "Dope Poisoning."**—Lee's patient was employed in an aeroplane factory as a "tapist." Taping is putting on strips of fabric 2 inches wide over the fabric seams after dipping them in "dope." The "dope" consists of acetate of cellulose or celluloid dissolved in tetrachlorethane, with amyl alcohol and benzene. This is the fifth fatal case reported.

Practitioner, London

January, XCVI, No. 1, pp. 1-130

19 *Treatment of Cerebrospinal Meningitis. W. Osler and Others.
20 Causes and Prevention of Epidemic Cerebrospinal Meningitis. H. Sutherland.
21 Cerebrospinal Fever. S. Neave.
22 Influence of War on Disease. H. D. Rolleston.
23 Trench-Foot or So-Called Frost-Bite. R. H. J. Swan.
24 Electrical Treatment of Trench-Foot and Frost-Bite. W. J. Turrell.
25 War Injuries of Peripheral Nerves. H. Campbell.
26 Treatment of Jaw Injuries. S. P. Mummery.
27 Typhoid Inoculation in Forces. A. Fleming.
28 Clinical Observations on Ninety-Eight Cases of Paratyphoid. H. Wiltshire.
29 *Treatment of Septic Wounds with Equal Parts of Ichthyol and Glycerin. C. W. Duggan.
30 Medically Unfit. H. Waite

19. **Treatment of Cerebrospinal Meningitis.**—Osler says there were in the home army 462 deaths from cerebrospinal meningitis, which places the disease second on the list of causes of death from acute infections. Speaking of vaccine treatment, Osler says there is this extraordinary discrepancy between the results obtained in many quarters in England and the results obtained by Flexner and others, in recent epidemics in the United States and elsewhere. He suggests that it may be a question of inert serum, an opinion which is shared by his co-authors.

29. **Septic Wounds Treated with Ichthyol and Glycerin.**—The advantages Duggan claims for ichthyol are: There is practically no irritation of the wound; the dressing does not adhere to the surface of the wound, it need only be changed once in twenty-four hours, in extensive septic wounds, not more than twice in twenty-four hours; there is a great saving in cottonwool, lint, and bandages; the strain in nursing is lessened; the patient is no longer disturbed by frequent dressing, and the time in the hospital is considerably curtailed, as compared with other methods. The method of application to the wound is by means of a camel-hair brush. Paint the surrounding skin, as well as the whole surface of the wound, or apply it on lint or gauze. On changing the dressing, avoid washing the surface of the wound with lotion; dry the surface with a small swab of cottonwool, and occasionally dab the surface with pure spiritus vini rectificati, for the drier the wound is kept the quicker the healing process. The dressing may adhere to the edges of the wound; to detach it, use freshly boiled water instead of any of the ordinary antiseptics.

Sei-I-Kwai Medical Journal, Tokyo

December, 1915, XXIV, No. 12, pp. 59-64

31 Operative Treatment of Acute Gonorrheal Epididymitis. Tsutsui and Yamashita.
32 Facial Furuncle or Carbuncle. K. Kuwabara.

Bulletin de l'Académie de Médecine, Paris

Dec. 21, 1915, LXXIV, No. 51, pp. 769-794

33 Supernumerary Ribs. (Signification ontogénique et phylogénique des côtes cervicales supplémentaires.) Capitan; (Deux cas de côtes surnuméraires de la région cervicale.) J. Privat and P. Colombier.
34 The Prognosis of Deafness from War Injuries. (Le pronostic des surdités de guerre — d'après 1,000 cas.) Lannois and F. Chavanne.
35 *Amputations in the War; the Indications and the Functional Outcome. (De la valeur fonctionelle des moignons après les amputations 1914-1915.) T. Tuffier.
36 *Pyoculture in Diagnosis and Prognosis. H. Barnsby and Truffier.

35. **Technic for Amputations to Ensure Best Functional Outcome.**—Tuffier's study of this subject is based on examination of 3,314 stumps after amputation, including forty-five multiple cases. Much more than half of the amputations were of the leg or thigh, as men wounded in the legs do not reach the hospital as early as those wounded elsewhere, while the wound is usually more soiled. He discusses the preferable technic for each type of amputation as the experiences in this war have modified many of the views that used to prevail.

36. **Pyoculture.**—This term was coined by Delbet to express comparative bacteriologic tests of the pus from a suppurating lesion. A more abundant growth of microbes in the pus than in bouillon is an unfavorable sign and thus throws light on the prognosis. In a case reported here by Barnsby and Truffier the wounded knee was red and swollen after it had been opened and cleared out, and the temperature kept high. They were on the point of opening up the knee again when tentative pyoculture showed that the pus had a destructive action on the microbian flora in the lesion. Under expectant treatment the temperature dropped and healing proceeded rapidly. In another case the wounded knee seemed to be healing perfectly but the temperature ran up and pyoculture revealed numerous and virulent germs; prompt amputation probably was all that saved the patient. Pyoculture characterized by absence of growth in the pus while the microbes proliferate in bouillon culture mediums, indicates a struggle between the organism and the invading microbes which needs therapeutic aid from without. On the other hand, negative pyoculture, that is, bacteriolysis of the microbes in the pus indicates that the organism is conquering, and that no help from without is required. The principles and practice of pyoculture were described in detail in THE JOURNAL July 10, 1915, p. 183.

Lyon Chirurgical, Lyons

November, 1915, XII, No. 5, pp. 565-700

37 Surgery in the Field Hospitals. (La chirurgie de guerre de première ligne au XIVe Corps d'armée.) Ferraton.
38 Study of Certain Infectious Complications of Gunshot and Shell Wounds. L. Lévy and L. Plisson.
39 Operative Treatment of Skull Wounds in the Field Hospitals. (La chirurgie des plaies pénétrantes du crâne par projectiles de guerre dans les ambulances immobilisées de l'avant.) G. Gayet.
40 Wounds of the Long Bones. (Les lésions des grandes diaphyses des membres par coups de feu.) L. Plisson.
41 Treatment of Wounds of the Joints in Field Hospital. (Plaies des articulations par projectiles de guerre dans une ambulance immobilisée de l'avant.) F. Varay.
42 Ophthalmology in the Field Hospital. (L'ophthalmologie sur le front.) L. Genet.

Paris Médical

Dec. 25, 1915, V, No. 32, pp. 557-572

43 *Direct Sunlight as Aid in Treatment of Wounds in War. (Héliothérapie des blessures de guerre.) Grangée.
44 Small Epidemic of Paratyphoid B Fevers Simulating Epidemic Meningitis. G. Laroche and Lecaplain.

43. **Heliotherapy for the Wounded.**—Grangée gives illustrations of his improvised service for heliotherapy of the wounded, and relates that he has been much impressed with the more rapid healing of the wounds exposed to the direct sunlight. The scars are less adherent, more supple, and are never painful, while callus develops normally and does not become exuberant. Repair and elimination of sequesters proceeded more regularly and spontaneously. He found that severe wounds responded with fever and inflammation when exposed to the sunlight early, and he was forced to allow the organism a certain interval for recuperation before commencing the heliotherapy. After two or three weeks or a month even the most destructive wounds showed benefit from the exposures; if there was still fever at the time, the temperature dropped to normal. By protecting the wound against the air, the heliotherapy can be applied to advantage even from the first. The deodorizing effect of exposure to the sunlight is direct and immediate. Suppuration is augmented at first as a rule and then grows less. He has never had but one refractory ulceration of the stump of the foot; this was after amputation for dry gangrene consecutive to freezing. An umbrella is sufficient protection for the head at need. He exposes the whole of the wounded area and gradually increases from half an hour to three or four hours a day.

Presse Médicale, Paris

Dec. 30, 1915, XXIII, No. 64, pp. 521-528

45 *Isolation and Psychotherapy in Treatment of Functional Disturbances of the Nervous System among the Troops. J. Dejerine and E. Gauckler.
46 *Bridge Plaster Casts for Compound Fractures in War. (Iconographie des appareils plâtrés pour fractures compliquées par projectiles de guerre.) M. Sénéchal.

45. **Functional Nervous and Mental Disturbances.**—Dejerine and Gauckler warn of the necessity for guarding against the development of functional disturbances in the wounded either from inertia, over-long immobilization or simulation. Those with functional disturbances should not be sent back to the home zone. They emphasize the importance of recognizing the functional nature from the start and giving proper treatment by psychotherapy, and graduated motor reeducation, under strict discipline.

46. **Bridge Casts.**—The illustrations show that the cast is applied to leave the lesion amply exposed, with one, two or three plaster or metal bridges arching over it like the handle of a market basket. Sénéchal has treated fifteen severely wounded men by applying these casts to immobilize the region before he attempted even to examine it. This gave the men time to recuperate from shock and allow the necessary operations to be done at leisure. Of course he refers to not badly infected wounds, the rectal temperature not over 39 C. (102.2 F.). His service is at Duvauchel-Amiens and the men reach there very soon after they are wounded. When given an anesthetic during the excitement still left from the battle, the period of agitation under the chloroform or ether was always extremely violent, and he imagined that this helped to spread infection. By immobilizing first and then giving the anesthetic all this is avoided, and he thinks it realizes great progress.

Revue de Gynécologie et de Chir. Abd., Paris

June, 1914, XXII, No. 6, pp. 465-576. Last indexed January 15, p. 227

47 *Wedge Excision of Fundus of Uterus. (L'excision transversale cunéiforme du fond de l'utérus d'après O. Beuttner.) L. Aubert.
48 Hydrosalpinx and Hydrorrhea. J. Mouchotte.
49 *Vulvar Pruritus. Eyraud-Dechaux.

47. **Wedge Excision of Fundus of Uterus.**—Aubert remarks that diseased ovaries and tubes are encountered mostly in young women; very few of his patients in this category were over 30. The gonococcus generally invades both sides, but when some portion of the ovary is still sound he tries to retain this and avoid unnecessarily radical measures, thus preserving the correlation between the uterus and the ovary, the internal secretion of the ovary and menstruation. He accomplishes this by a technic which he has applied with great success in thirty cases. Through a laparotomy incision he resects a broad transverse wedge in the fundus of the uterus, and sutures the wound in the uterus. Then he resects the ovaries, saving as much sound tissue as possible. The peritoneum is drawn down to roof over the site of the operation, which is concluded with parietal sero-serosa hysteropexy. The broad wedge cut out aims to get rid of and cure the metritis which almost invariably accompanies disease in the adnexa. By this excision of the cornua no chance is left for painful exudation in this region or suppuration in the intra-uterine end of the fallopian tube. Menstruation continued regular in all the patients, and the uterus is held in movable anteflexion. The various steps of the operation are shown in illustrations, as also some of the specimens removed.

49. **Vulvar Pruritus.**—Dechaux devotes over fifty pages to this study of vulvar pruritus. When severe and persisting, it is liable to breed recluses, and suicides from this cause are known. Neurasthenia may develop and the entire organism suffer. The first step in treatment is to exclude all possible causes. An inherited predisposition to nervous affections may be evident. There may be an accumulation of causes, and the memory of the cells facilitates return of the pruritus. She calls this the "prurigenous mnemodermia." An attack of vulvar pruritus accompanying some genital affection is liable to return later, even without any local factor to invite it. With a constitutional predisposition to pruritus it generally locates at points of lessened resistance. Among the causes that must be sought are vermin — they are liable to get into the cleanest families — medication, local or general, that may have started or is maintaining the pruritus. In one distressing case of vulvar pruritus it was traced to vaginal douches with boiled water containing merely a very little tincture of eucalyptus and menthol. Other drugs known to have brought on vulvar pruritus in local applications are salol, phenol, mercuric chlorid, and merely too hot and too often repeated water douches, perfumed soaps, toilet waters, etc. Still another and quite frequent cause is the oxyuris. With this there is usually associated anal pruritus. In one of Dechaud's cases in this category the attacks of pruritus occurred mornings; in six others of which she knows only two occurred at evening or night. The eggs of the oxyuris may be deposited on the mucosa or skin and cause pruritus; five instances of this are cited. The lesions resembled those of a secondarily infected eczema, and only a casual microscopic examination revealed the helminths' ova. Thrush has also been observed as a cause of pruritus in young infants and debilitated elderly women, and in a few pregnant women. A polyp in the urethra, urethritis, calculi in the bladder, herpes, zona, inflammatory processes in the vulva, vagina or uterus or fibromas are also liable to induce pruritus, as likewise syphilis, diabetes and other constitutional diseases. She noted pruritus in about 5 per cent. of her cases of gonorrhea in women; it always subsided as the gonorrhea healed. In four such cases the secretions caused local pruritus also in the husband.

The vulvar pruritus in pregnancy usually disappears after delivery. The women subject to vulvar pruritus at the menopause may be of the gouty temperament or there may be local changes in the vagina setting up the pruritus or nervous disturbances. After exclusion of all other causes, there is left a group of cases with essential pruritus. It is distinguished by its intensity and tenacity. Tentative organotherapy is justified here, trying ovarian, thyroid and pituitary treatment. Vulvar pruritus thus requires general treatment to relieve constitutional disease, to reduce toxemia and reenforce the resisting powers in all ways, studying the inherited predisposition, the environment, the food, the general hygiene, and traumatism. Among the measures that may be required are change of scene, and abstention from coffee, tea, chocolate, alcohol, beer, sausages, veal, fish and shellfish, cheese, tomatoes, spices, strawberries and gooseberries, cabbage and cauliflower. Hygiene of the digestive tract ranks first in all

treatment of pruritus. The teeth should be put in order; a decayed tooth may keep up a pruritus started by some other cause. An instructive case of this kind is related. The excitability of the nervous system should be reduced, and outdoor life enforced. Valerian, arsenic and calcium may aid, but hydrotherapy is usually more effectual. For local relief of the pruritus, Dechaux has found most effectual a pad of absorbent cotton dipped in boiling water containing, or not, three or four tablespoonfuls of good vinegar to the liter. It is applied to the vulva as hot as the hand can bear it, dipping it anew in the water several times in the course of three or four minutes. The idea is to sop the vulva, not to rub it. Then the vulva is dusted with talcum powder. The relief is immediate but only transient as a rule. In only one instance the hot applications failed to relieve, and cold water proved to act better. The hot air jet, electricity, radiotherapy and hydrotherapy aid in some cases, and Dechaux reports relief in others from a fine jet of hot water played on the vulva from a height of 20 or 25 cm. She gives a long list of lotions that have proved useful in different cases, including camphorated brandy; chloroform water; potassium bromid (25 gm. to the liter); morphin; ichthyol (20 gm. to the liter of water), and naphthol (15 or 20 gm. to the liter of water). Besides these, a trial might be made with lotions made from a decoction of coca leaves; tobacco (five or six large leaves per 1,000 gm. water); belladonna; a 2:1,000 solution of potassium cyanid; or 5:1,000 copper sulphate. Mercuric chlorid, phenol and chloral have been recommended but have been known to irritate and induce eruptions. Psychic treatment is generally an important adjuvant, and in absolutely rebellious cases linear scarifications or superficial cauterization aim to destroy the nerve terminations keeping up the pruritus. She tried autoserotherapy in one case but it failed. Excision of vulvar leukoplasia not only wards off cancerous degeneration but cures the pruritus accompanying it. The defect heals readily and rapidly but recurrence of the pruritus has been known after resection of the mucosa. Resection of the nerves in the region might be considered when the pruritus seems to be a kind of neuralgia. In conclusion she cites Walthard's two cases in which psychotherapy alone cured the patients after failure of everything else. The pruritus was evidently purely functional in these cases.

Policlinico, Rome

Dec. 12, 1915, XXII, No. 50, pp. 1669-1700

50 Technic for Administration of Quinin in Malaria. (La chinina e la cura della infezione malarica.) Ciuffini.
51 *Phenol in Treatment of Tetanus. (La cura del tetano con le iniezioni di acido fenico. Metodo del Prof. Baccelli.) S. Nicro.
52 *Cure of Tuberculous Lesion in Knee under Iodin. (Di un grave caso di artrosinovite tubercolare, trattato con le iniezioni iodo-iodurate alla Durante.) G. C. Rovatti.

December 19, No. 51, pp. 1701-1732

53 Bier's Technic for Osteoplastic Amputation of the Leg. G. Serafini.
54 Steam Bath in Treatment of Frozen Foot. (La cura dei congelamenti mediante il bagno a vapore.) A. D'Elia.
55 Potassium Bitartrate plus Boric Acid for Disinfection of Wounds. (I vecchi antisettici nella odierna chirurgia di guerra.) A. Cossu.
56 Medical Maladies. (Le malattie mediche.) L. Verney.

51. **Phenol in Treatment of Tetanus.**—The incubation in three cases was from ten to nineteen days and these patients all recovered under the injections of 2 per cent. phenol by Baccelli's technic. The fourth was a small child who developed tetanus two days after an accident and died within forty hours.

52. **Tuberculous Knee Lesion Heals under Iodin.**—Rovatti applied Durante's iodo-iodid technic in the knee case described, as he had been so gratified by the success of this treatment in tuberculous glands and tuberculous peritonitis. The patient was a youth of 17, of a tuberculous family, both parents and two brothers having succumbed to tuberculosis of the lungs or meninges. The lad was a hunchback and the knee trouble was of two years' standing. After evacuating the focus, Rovatti injected a mixture of 1 gm. metallic iodin, 3 gm. potassium iodid, 2.5 gm. guaiacol, and 50 gm. neutral glycerin. This was the formula for the injections. They were given daily and by the end of the fourth month the cure was complete and permanent.

Riforma Medica, Naples

Dec. 4, 1915, XXXI, No. 49, pp. 1345-1372

57 Tartar Emetic in Leishmaniosis in Children. (La cura specifica della leishmaniosi nei bambini.) R. Jemma.
58 Electrotherapy for the Wounded in War. (I contributi della elettricita medica nella traumatologia di guerra.) M. Bertolotti.
59 *Occult Bleeding in Differential Diagnosis. (Sulla ricerca chimica delle piccole traccie di sangue in semejologia.) C. Salvini.

December 11, No. 50, pp. 1373-1400

60 *Treatment of Acute Meningitis by Arresting Reflex Action. (Nuovo contributo clinico alla teoria del l'inibizione infiammatoria nella meningite acuta.) T. Silvestri.
61 The Wassermann and the Landau Reactions in Syphilis. (Reazione di Wassermann e reazione dei sieri sifilitici col reattivo iodato di W. Landau.) C. Piazza.

December 18, No. 51, pp. 1401-1428

62 Pharmacologic Study of Iodo-Albumin. (Ricerche farmacologiche sulla protijodina.) V. Susanna.
63 Vaccination against Paratyphoid. (Sulla opportunita di estendere la vaccinazione delle nostre truppe anche contro i paratifi A e B.) U. Gasperini.

59. **Occult Bleeding.**—Salvini has been investigating simultaneously the various technics for detection of invisible blood in the stomach content or stools. The benzidin technic and Ganassini's eosin reaction gave the clearest responses, and this promptly, while they are sufficiently sensitive (in proportions down to 1 per 15,000) for all practical purposes. He warns that only the findings in the first thirty minutes are reliable. In Ganassini's method, 0.5 c.c. of crystallized eosin are dissolved in 100 c.c. absolute alcohol. In another vessel are dissolved 2.5 c.c. potassium hydrate dissolved in alcohol with 2 c.c. distilled water. Then in a third vessel all the potash solution is mixed with 10 c.c. of the eosin solution and the whole kept in boiling water for eight or ten minutes. It is then cooled and a drop or two of alcohol are added to replace what has been lost by evaporation. When ready to use, 1 c.c. of 10 per cent. hydrogen dioxid is added to 5 c.c. of the reagent, and the fluid to be examined is dropped slowly into the mixture. With a positive reaction, the blue tint veers to yellow or orange, with a greenish or yellowish fluorescence. The reagent must be kept in a cool place and sheltered from the light. The hematin acts as a catalase, fixing the oxygen to the eosin and thus enabling it to regain more or less its former tint which the potassa has changed to blue.

60. **Systematic Inhibition of the Inflammation in Treatment of Acute Meningitis.**—Silvestri uses the term "inibizione infiammatoria" to express the idea advanced by Spiess that inflammation cannot keep up when the reflexes emanating from the inflammatory focus are arrested or abolished. Spiess gave an anesthetic for the purpose, and Silvestri has been applying the idea in treatment of acute meningitis and with most gratifying results. Stroganoff's prophylactic method of treating eclampsia, warding off the convulsions by keeping the woman under the influence of chloral and morphin, has afforded further bases for Silvestri's treatment. He was especially impressed with its efficacy in a case of acute delirium with positive Widal; all his other cases of this kind terminated fatally. It also saved a woman with acute puerperal mania, and two children with repeated convulsions for thirty-six hours. (He gave no morphin to the children.) After much tentative research he selected the calcium salts as the main feature of his method, taking advantage of their sedative action on the nervous system, controlling the vegetative phenomena, as well as their sedative and reconstructing action on the central nervous system, their harmlessness, however long continued, as he has established by personal research, and, finally, the marked curative and prophylactic influence in respect to the toxins which are particularly liable to induce convulsions.

He gives the details of a few additional cases since his first communications on the subject in 1912 and 1914, and declares that the results speak for themselves and testify to the efficacy of this method of treating diffuse serous meningitis. He uses equal parts of calcium bromid and calcium lactate, for adults up to 10 or 12 gm. in the first two days, along with 2 or 3 gm. of chloral, and, possibly, one or two injections of morphin. The dosage is reduced after the first two days, and ice is kept on the head and the bowel functioning supervised. He declares that lumbar puncture is

rendered unnecessary by this treatment which is especially adapted for private patients in the home where lumbar puncture is not always practicable. He discusses the mechanism of this method of treatment, citing in conclusion Calcaterra's statement that diphtheria toxin obtained from cultures on a medium containing calcium chlorid was much attenuated, and the pyocyaneus lost part of its staining properties. Also that H. H. Meyer has reported that dogs previously treated with calcium salts did not develop pleural effusion, as was inevitable otherwise when diphtheria toxin was injected. Fischer and Moore have also reported that calcium salts prevented the serous effusions induced in animals by sodium iodid. He cites also Müller and Saxl's experience that in old cases of tuberculous effusion the return of the effusion was materially delayed by administration of calcium salts. Hamburger and De Heau have called attention to the power of small doses of calcium salts to enhance the phagocytic properties of the leukocytes, and Silvestri has often been impressed with the remarkable efficacy of prolonged generous doses of calcium salts in treatment of the exudative diathesis; in this diathesis the inflammatory reaction is entirely out of proportion to the cause.

Semana Medica, Buenos Aires

Sept. 23, 1915, XXII, No. 38, pp. 357-384

64 Two Gallstone Operations. (Dos casos de cirugia de las vias biliares.) J. Salvador.
65 Diagnosis of Tuberculous Cavities in Lower Part of Lung. (Tuberculosis pulmonar cavitaria de la base del pulmon.) C. P. Mayer.
66 *Latent Filariosis in Brazil. (Filariosis latente de Tucuman.) T. Padilla.

September 30, No. 39, pp. 385-416

67 Present Status of Treatment of Pulmonary Tuberculosis. C. P. Mayer.
68 Experiences of an Obstetrician in Remote Rural District. (La obstetricia en el campo.) A. A. Sonnenberg.

October 7, No. 40, pp. 417-446

69 *Aneurysm of Aorta in Boy. (Dilatacion sacciforme de la aorta en un niño de 12 años.) M. Acuña.
70 Sarcomatous Degeneration of Fibroma of Nasopharynx in Young Man. R. Becco.
71 Folding Shelf and Leg Rests that Screw to Any Table or Bed Transforming it into Gynecologic and Obstetric Table. (Nuevo modelo de mesa desarmable para partos y curaciones adaptable a cualquier cama o mesa comun.) N. L. Cuneo.
72 Chronic Simple Anemia in Girl of Six Apparently Cured by Horse Serum Tablets. A. Buzzo.

October 14, No. 41, pp. 447-474

73 Sarcomatous Degeneration in Woman of 64 of a Vaginal Fibroma of Ten Years' Standing. A. Chueco.
74 Present Status of Filterable Viruses. C. Malbran.

October 21, No. 42, pp. 475-502

75 Electricity in Medicine. C. M. Perez.
76 *Serotherapy of Bubonic Plague. J. Moreno. Commenced in No. 30.

66. **Latent Filariosis.**—Padilla has found a microfilaria in the blood of 25.21 per cent. of the persons examined in the Calera district and in 16.04 per cent. in Arcadia, all in the Tucuman province. He regards it as a new species, and states that those harboring it do not seem to suffer from it in any way. There is some evidence that the mosquito is the transmitting agent. A photograph is given of a group of seven adults and five children from among those with positive findings. He has never encountered the adult form, only the embryos, not having had opportunity for postmortem examination in any case to date. They are smaller than other filarias known, and are most numerous in the peripheral blood drawn at night, although they could also be detected in the daytime. In one case he found from 33 to 34 specimens in each field, in others from 4 to 6; 12 to 18, and in one case from 60 to 75 at midnight and only from 30 to 45 at noon.

69. **Aneurysm of the Aorta in Boy of Twelve.**—Acuña remarks that the rare cases of aneurysm in children that have been reported have generally been credited to rheumatism or chorea, but the Wassermann test has revealed that inherited syphilis is the main factor in the majority of cases. The dilatation of the aorta develops slowly and causes no symptoms for many years as a rule. Children seem to tolerate the aneurysm better than adults. In the case he reports, the thrill, the visible pulsation and roentgenoscopy all confirmed the dilatation of the aorta to form an actual sac. There were no signs or symptoms of inherited syphilis, the Wassermann was negative, but the child's mother responded promptly to the Wassermann test, and had a history of four abortions in eleven pregnancies. The syphilitic toxins had probably weakened the walls of the aorta during the intrauterine stage.

76. **Serotherapy of the Plague.**—In this sixth and final instalment of Moreno's article he gives the details of eight cases from the epidemic at Oporto and of thirteen that were in his personal charge. The list includes the case of Dr. C. Pestana, who succumbed to infection from a scratch in dissecting a plague cadaver. The first symptom of trouble was itching in the axilla on that side, the third day, followed in a few hours by chills, fever and swelling of a gland in the axilla with death the seventh day after the infection. There were only two other deaths in the twenty-one cases here reported. Study of all these cases shows that in certain cases bubonic plague develops for a time as a localized infection. Although the bubo or buboes are accompanied by high fever, etc., yet there does not seem to be general intoxication. Subcutaneous injection of 20 or 40 c.c. of antiplague serum at this stage helps the organism to throw off the disease. It is naturally more effectual the earlier it is applied. But the frequency of severe general intoxication and the difficulty in recognizing it early, make it much safer to push the serotherapy with large doses and give it both by the subcutaneous and intravenous routes. The cases related emphasize the prompt benefit from the intravenous serotherapy, comparable only to that from diphtheria antitoxin. Within twenty-four hours the temperature drops and the general health improves. As it is impossible to foretell the course of the cases from the early symptoms, he regards it as demonstrated that intensive treatment should be instituted at once, and at least 80 c.c. of the serum should be injected intravenously. This wards off general intoxication and tends to abort the disease and save the internal organs from the destructive action of its toxins. He advocates 100 c.c. for the initial dose, repeating it within twenty-four hours, taking the temperature as the criterion. It should be reduced to normal. The clinical charts he gives demonstrate the wisdom of this dosage and its harmlessness. The persisting buboes are of no more clinical importance than any ordinary local inflammatory process. In conclusion he reports five cases of pneumonic plague with three deaths. The two patients who recovered had been given each three intravenous injections of antiplague serum on successive days.

Russkiy Vrach, Petrograd

Oct. 30, 1915, XIV, No. 44, pp. 1033-1056

77 General Anesthesia in War Hospitals. V. A. Oppel.
78 Treatment of Tetanus (Stolbnyak.) V. N. Novikoff.
79 The Technic for Preparing and Administration of Antityphoid and Anticholera Vaccines. V. I. Nedrigailoff.
80 Traumatic Laceration of the Mucosa of the Bladder. (Travmaticheskii razriv odnoe slizistoi obolochki mochevogo puziryа.) G. I. Baradulin.
81 *Blumberg's Sign of Appendicitis. (K voprosu o t. naz. priznakie Blumberg'a.) P. N. Nikolaieff.
82 Operative Treatment of Perforating Wounds of the Cornea and Cataracts Caused by Explosions. M. P. Eliasberg.
83 Positive Wassermann Reaction Before Syphilitic Infection. S. A. Voliansky.

81. **Pressure Sign of Peritoneal Irritation.**—The so-called Blumberg's sign is the pain in the region of the appendix following rapid removal of the hand after it has been applied to the spot to induce pressure. Nikolaieff denies that it is specific for appendicitis. He has been using this sign long before Blumberg, and found it not only in appendicitis, but in every case of peritoneal irritation, whatever its cause. Thus he found it in perforative peritonitis, gastric or duodenal ulcer, in cholecystitis, typhoid ulcers, etc. He usually examines each of the four quadrants of the abdomen. He gives the history of five out of 340 cases in which he studied this sign. It is especially pronounced during the first twenty-four or forty-eight hours, being thus one of the earliest and therefore most valuable signs of acute involvement of the peritoneum by any of the above mentioned diseases. In chronic peritonitis, for instance tuberculous peritonitis, it is absent.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Dec. 11, 1915, II, No. 24, pp. 2551-2634

84 The Red Cross Dogs. (Roode-Kruishonden.) E. Bemelmans.
85 Electrograms of the Frog Heart under the Influence of Extra Electric Irritation. (De gevolgen van extraprikkeling voor het electrogram van het kikkerhart.) S. de Boer.
86 Experimental Research on Hemolytic Amboceptors. (Dierproeven over de werking van haemolytische amboceptoren.) L. P. Daniels and L. S. Hannema.

December 18, No. 25, pp. 2635-2714

87 *Quadriceps Paralysis. (Quadricepsverlamming.) H. A. Laan.
88 Some New Chemical Tests for Alkaptonuria. (Eenige nieuwe reacties op alkapton.) M. W. Scheltema.
89 Unsuspected Scrap of Bone Impacted in the Pharynx; Two Cases. (Twee gevallen van een beentje in het strottenhoofd.) C. E. Benjamins.

87. **Quadriceps Paralysis.**—Laan comments on the conflicting views recorded in the literature as to the value of transplantation operations in treatment of quadriceps paralysis. Mayer has reported the case of a girl of 15 with bilateral quadriceps paralysis who had learned to manage her legs so well that no operation could have hoped to improve their functioning. She had learned to utilize the auxiliary forces, strengthening the sound muscles. Laan has had forty-six patients with quadriceps paralysis in his charge; it was bilateral in twenty of the cases. This experience has convinced him that treatment should never start with transplantation or arthrodesis but should aim to prevent contracture and atrophy of muscles, and this should be the task of the family physician long before the case reaches the orthopedist. Laan relates the details of twenty-five of the more instructive cases to illustrate the efficacy of simple measures perseveringly applied. All thus reported were cases of flaccid infantile paralysis. In none was the quadriceps alone paralyzed; other muscles were always involved. The main thing is to determine the exact factors which are involved in the inability to stand or walk. This very often proves to be an insecurity in the set of the foot on the ground. When the position of the foot can be rendered stable, the sound muscles learn to compensate the paralyzed ones and good functional use of the limb is regained. One striking benefit from this is that the limb grows in length. Correction of contracture of the knee generally improves conditions so that nothing further is required except ensuring that the foot stands firm. There was genu recurvatum only in one of the forty-six cases. A transplantation operation was done in eleven cases; one in this group was an adult, and the disappointing outcome discouraged him from any further attempts at transplantation in grown people. Even in children, he thinks equally good results can usually be obtained by simple means. He aims to get the child on his feet and let him use his legs, without operative measures, although occasionally tendon transplantation may be necessary for stabilization of the foot. Anatomic improvement can almost always be counted on in young children, and functional improvement in all. Older children and adults usually have adapted themselves to conditions so that tendon transplantation is superfluous at this stage. Arthrodesis of the hip or ankle is always bad, and arthrodesis of the knee for children is nearly as bad. It should be considered for adults only when they definitely prefer the arthrodesis of the knee to the annoyance of a supporting device. He had no case of the kind. The aim is to hold the parts in a good position and exercise them.

Finska Läkaresällskapets Handlingar, Helsingfors

1915, LVII, No. 1, pp. 1-144

90 *Twenty Years of Scarlet Fever in Town of Twenty Thousand Inhabitants. (Om scharlakansfeber och dess upptradande i Vasa under de senaste 20 åren.) K. Ekholm.
91 *Tuberculous Abscess in the Liver. F. Saltzman.
92 The Suture with Laparotomy. (Till frågan om det klassiska laparotomisårets suturering.) O. Engström.

No. 2, pp. 145-254

93 Drop-Like Bodies in the Epithelial Cells of Postgonorrheal Urethral Secretion. (Om hittils föga beaktade bildningar i det postgonorrhoiska uretralsekretets skifepitelceller.) A. Cedercreutz. Illustrated.
94 *Tetany after Thyroid Operations. (Om tetani i anslutning till strumaoperationer.) E. Sandelin.
95 Severe Injury of Vesicovaginal Wall during Criminal Abortion; Fatal Septicemia. T. Lansimäki.
96 Postglenoid Process on Skull not a Constant Sign of Degeneracy. H. Grönroos.

No. 3, pp. 255-372

97 Cicatricial Stenosis of the Pylorus. H. v. Bonsdorff.
98 *Severe Hemophilic Intestinal Hemorrhage Treated with Transfusion of Blood. R. Forsius.
99 *Atresia with Retention of Menstrual Blood without other Deformities. (Nya iakttagelser af atresi med retention af menstrualblod ved enkel utero-vaginalkanal.) A. Weckman.

90. **Scarlet Fever.**—Ekholm relates that during the last twenty years, in the town of Vasa, no cases of scarlet fever occurred in about 60 per cent. of the buildings of the town. In other buildings the disease occurred again and again. In one building, with eighteen flats, cases were reported in 1899, 1900, 1901, 1903, 1906, 1907, 1910 and 1913. He cites facts which show that the susceptibility varies at different times and some families seem to be less resistant. There were 23 return cases among 724 patients dismissed from the hospital as cured and presumably no longer contagious. Walking cases, without eruption, are probably responsible in many instances for the spread of the disease. Only twenty-two of all the patients treated were adults.

91. **Tuberculous Abscess in the Liver.**—The man of 50 whose case history is related had for ten years presented symptoms of mild pulmonary tuberculosis, during the last three years accompanied by symptoms on the part of the kidneys and chronic diarrhea. No tubercle bacilli could be found in the sputum. Necropsy disclosed a large abscess in the liver, surrounded by cirrhotic liver tissue. The course of a tuberculous abscess in the liver is insidious and chronic. Except for vague gastro-intestinal disturbance, there is nothing to call attention to the liver as a rule. The hectic fever is usually ascribed to the primary process until the liver lesion spreads to involve the peritoneum.

94. **Tetany after Thyroid Operations.**—In one of the three cases of tetany developing consecutive to operations on the goiter, the tetany proved so severe that death ensued during the convulsions. The patients were women of 23, 28 and middle age, and one had had part of the thyroid removed fourteen years before. Sandelin ascribes the tetany to interference with the circulation in the parathyroids, as the inferior thyroid artery had been ligated in the course of the operation. He warns that this had better be avoided in future.

98. **Transfusion of Blood in Hemophilia.**—A boy of 6 was in such a threatening condition of anemia from repeated intestinal hemorrhages that direct transfusion of blood seemed the last resource. As no other donor was available at the time, Forsius gave his own blood and a marked turn for the better was soon apparent. Gelatin was given at the same time. After four months of freedom from hemorrhage, subcutaneous hemorrhages brought the hemoglobin down to 20 per cent. Then 20 c.c. fresh blood from a young man were injected and gelatin given. A year followed without further mishaps, but then fatal intestinal hemorrhage occurred. Forsius points out that the substances which have any influence on hemophilic hemorrhage are those which induce leukocytosis. He does not think the blood platelets are directly involved. As a means to estimate the amount of blood transfused, he weighs both the donor and the recipient immediately before and after the transfusion. The difference in the weight of each indicates the amount of blood that has changed hands.

99. **Dysmenorrhea from Atresia.**—Weckman adds seventeen new cases to the nine previously published from Engström's clinic. On the basis of these twenty-six cases he discusses the pathogenesis, consequences and treatment. The blood regurgitated into the fallopian tubes may make its escape safely afterward when the natural outlet is made permeable. The latter procedure is not always simple and easy. In one case of low atresia of the vagina, Engström was compelled to work through a laparotomy incision, introducing the forceps to stretch the gynatresia from above. With atresia of the cervix it may be necessary to resect the constricted portion. The twenty-six cases are related in detail with the special technic applied in each and the outcome.

Hygiea, Stockholm

1915, LXXVII, No. 22, pp. 1329-1407

100 Case of Pneumococcus Sepsis. E. Saul.
101 Solid Teratoma in Right Chest. (Fall av teratom i högra thorax.) H. Bendz.
102 *Protecting Mechanisms of the Body by Chemical Means against Action of Poisons. (Om några väsentligen kemiska skyddsmekanismer mot förgiftningar.) C. G. Santesson.

102. Chemical Autoprotection Against Action of Poisons.—Santesson's article is the lecture opening his course of pharmacology. He describes in particular the chemical means with which the organism seeks to overcome the action of poisons by stimulating the functioning of certain organs, by generating antibodies, etc.

Ugeskrift for Læger, Copenhagen

Dec. 9, 1915, LXXVII, No. 49, pp. 1915-1962

103 *Contraindications against Subcutaneous Injections of Epinephrin. (Om Kontraindikationer mod den medicinske Anvendelse af subkutane Adrenalininjektioner.) L. S. Fridericia.
104 *Necessity for Breaking up the Vicious Circle with Chronic Disease. (Circulus vitiosus i kroniske Lidelser.) P. Lorenzen.
105 *Mumps Appears for First Time in Greenland. (Erfaringer fra en Parotitisepidemi i Grønland.) A. Bertelsen.
106 Chicken Fleas as Parasites on Man. (Hønselopper som Parasit hos Mennesker.) Strodtmann.

December 16, No. 50, pp. 1963-1994

107 Two Cases of Congenital Malformation of the Heart. (I. Truncus arteriosus persistens totalis. II. Atresia ost. venos. dext.) G. Jørgensen.
108 Relapsing Fever Cured by Neosalvarsan. (Et Tilfælde af Fb. recurrens behandlet med Neosalvarsan.) C. H. Würtzen.
109 Relapse after Lorthioir's Operation for Inguinal Hernia in Three Months' Infant. Bjerrum.
110 Spontaneous Partial Strangulation by Hair of Excessively Developed Labia Minora; Two Cases. O. Haslund.

103. Contraindications Against Subcutaneous Injections of Epinephrin.—Fridericia refers to the medical use of epinephrin. He says that it is used in Denmark quite extensively in treatment of asthma. The asthma patients admitted to the Rigshospital in recent years had all been given subcutaneous injections of epinephrin at some time or other. The transient pallor, chilliness and palpitations sometimes observed after the injection have always been regarded as negligible by-effects in comparison to the relief obtained from the epinephrin. M. Donaldson seems to be the only one who regards these by-effects as so serious that he has given up the use of epinephrin. Fridericia has compiled from the literature five deaths following injection of epinephrin. In one of these a large dose (0.6 gm.) had been injected into a vein in a much debilitated patient with infarction of the lungs, granular nephritis and arteriosclerosis. In all the others the epinephrin had been injected into the muscle of the uterine cervix while the patients were under the influence of chloroform. He has also found two deaths on record after subcutaneous injection of epinephrin, but these were in infants, only 3½ months old. Kauert has reported a case of briefly transient pulmonary edema in a patient with pneumonia given an intravenous injection of epinephrin, and arrhythmia with dyspnea in a patient with an aortic valvular defect with failing compensation. Experimental animals can stand from ten to fifty times relatively larger doses by subcutaneous injection. A number of clinicians have reported unfavorable experiences with subcutaneous injection of epinephrin in cases of heart or valvular defects. Some warn expressly against it with heart disease or nephritis with high blood pressure. On the other hand, testimony is constantly accumulating as to the value of epinephrin in sudden heart weakness in the course of acute infectious diseases.

These and other data cited confirm the danger of administering epinephrin in case of organic heart or valvular disease, and this conclusion is reenforced by two cases from Fridericia's own experience. The epinephrin had been given to relieve asthma in both, but the asthma was not, as supposed, ordinary bronchial asthma, but was of cardiac origin. The subcutaneous injection of 0.4 c.c. of 1:1,000 epinephrin in the first case was followed by collapse and angina pectoris and the man of 62 died the second day, after a period of Cheyne-Stokes respiration. The second patient was a woman of 49 with hypertrophy and dilatation of the left ventricle. She had suffered from dyspnea at times during the last eighteen months and in one severe attack she was given a subcutaneous injection of 0.4 c.c. of epinephrin. Dyspnea became much aggravated at once and the woman vomited and felt much depressed. Under morphin and camphor she felt better, but died three months later having presented angina pectoris and Cheyne-Stokes breathing during the interim. In both these cases the intern summoned in haste to the patients failed to distinguish that the asthma was of the cardiac rather than the ordinary bronchial type. In fact, the diagnosis that had accompanied the patient to the hospital was "bronchial asthma."

Signs of a valvular defect or hypertrophy of the left heart generally exclude bronchial asthma. With cardiac asthma there is no expectoration or merely reddish foamy masses. Fine moist râles may be heard with cardiac asthma while with asthma of the bronchial type there are rhonchi. Bronchial asthma usually occurs only at certain seasons of the year. The sputum also shows the characteristic spirals, etc., and the blood eosinophilia. Opinions are conflicting as to whether epinephrin should be given when true bronchial asthma is accompanied with a weak heart. Fridericia regards any cardiovascular insufficiency as contraindicating it.

104. The Vicious Circle in Chronic Affections.—Lorenzen expatiates on the importance of the secondary symptoms which develop in the course of digestive disturbances, traumatic lesions or other chronic trouble. The secondary symptoms, general nervousness, etc., may overshadow the primal trouble and the whole form a vicious circle. It is like a circular chain, and the physician by attacking a weak link may break up the chain completely. If he does not succeed with one of the links he should attack another. In some cases systematic massage of the abdominal wall cures a tendency to fibrositis and ptosis, and this in turn restores better conditions in the functioning of the viscera, thus relieving the physical discomfort and the dread of organic abdominal disease. Relief from this worry brings peace and sleep, and a long step has been taken toward a complete cure. In other cases drugs to relieve insomnia may break up the vicious circle. In still others some local rheumatic affection is accompanied by general nervousness and chronic dyspepsia. Although the latter is probably the primary, yet he directs treatment to the rheumatic trouble alone until he gets the patient's confidence and has enough control over him to get the measures enforced which the dyspepsia requires. Then gradually all the disturbances disappear. Chronic digestive disturbances sometimes yield surprisingly to belladonna which he explains by assuming that the secondary nervous symptoms had gradually taken the upper hand. Correction of the latter breaks up the vicious circle.

105. Introduction of Mumps into Greenland.—Bertelsen writes from Umanak in Greenland that primary epidemic parotitis was never encountered in Greenland to his knowledge until the infection was brought in 1913 by a ship from Denmark, and of the 2,425 individuals in the district, about 1,500 contracted the disease. In his special district, 191 of the 285 individuals were affected, that is, 66 per cent. of the men and 68 per cent. of the women. No infant under 2 was affected; 18 per cent. of the male patients developed orchitis and 5.3 per cent. of the women had mastitis; that is, about half of the women who were nursing infants at the time. In 3 of the 8 cases of mastitis this was evidently the primary localization of the disease, the parotitis following later. There was suppuration of the parotid gland in one case and of the breast in one. Oophoritis could not be determined with certainty in any case. There were no fatalities and no chronic trouble seemed to be left in any instance.

Correction.—Benzin, not Ether, for Bacteriologic Examination of Stools.—The term "petroleumsæteren" was incorrectly translated "ether" instead of "petroleum ether" as it should be, in Abstract 124 in THE JOURNAL, Jan. 22, 1916, page 317. The word occurs five times in the abstract and once in the title, and in each instance petroleum ether should be specified. This has a boiling point below 50 C., while the boiling point of the closely allied benzin is stated to be 80 C. The lower the boiling point, the greater the destructive action on the colon bacillus.